

- IV. EV Discussion topics—this report will be forthcoming, it is currently under management review. **Action Item:** Heather will set up a call with Bob Smude at MDH a week or two after MDH is given the draft report for factual review. R5 and MDH will consider whether it would be better to have CWS and NCWS issues discussed separately or together.
- V. Setting a future date for a NCWS focused call. **Action item:** Janet sent an invitation for May, 15, 8 am – 9:30 am. **Status:** Done
- VI. Other items:
- A. Nitrate discretionary waiver for NTNCWS or TNCWS. Concern about whether regs allow for use of alternate mcl “discretionary waiver” for NTNCWS or just TNCWS. MDH currently allows NTNCWS, but does not allow schools, etc., to use it. **Action item:** Janet will follow up with Tom M, Tom P and HQ on this issue. **Status:** We encourage MDH to reconsider allowing NTNCWS to use the discretionary waiver, unless the system or state can demonstrate no adverse health impacts. A recent SDWIS pull had about 4 NTNCWS, including a restaurant, under the discretionary waiver.
  - B. MDH/HIS Coordination. fyi, MDH lab occasionally runs samples for the Indian Health Service, and the two agencies are meeting. **Status:** Janet notified the Direct Implementation Team Leader, and invited R5 to be included in dialogue if issues warrant.
  - C. USDA NDWAC meeting last year. *Discussion:* Tom Poy mentioned some of the flexibilities discussed by the group, such as sharing managerial work for systems that are not physically connected.
  - D. Small systems workshop in Cincy, will it be happening? *Discussion:* Mindy mentioned (at the State Directors meeting the next day) that they are trying to make it happen, and will know more soon.
  - E. Duluth lab cert. Are there regs that apply here? How quickly do they need to be certified once the lab has moved. Jerry said that there were some new incubators at the new location, but the equipment and layout is virtually the same. **Action item:** Tom P. said he will follow up on this, and get back to the State.



**Percent of Non-Transient Non-Community Water Systems Meeting ALL Health Based Standards**  
**CY 2006 - 2012**

*Milestone 1: By 2016, 95% of non-transient non-community water systems receive water that meets health-based drinking water standards.*

	2006 % of Systems	2007 % of Systems	2008 % of Systems	2009 % of Systems	2010 % of Systems	2011 % of Systems	2012 % of Systems
Illinois		93.5%	93.7%	95.8%	96.0%	95.7%	96.8%
Indiana		85.2%	86.5%	88.0%	91.2%	94.2%	93.9%
Michigan		92.0%	91.4%	91.2%	92.2%	94.4%	94.5%
Minnesota		95.4%	95.1%	94.8%	95.9%	98.2%	96.6%
Ohio		84.3%	88.0%	88.6%	91.9%	91.4%	93.0%
Wisconsin		94.7%	94.0%	94.7%	94.7%	94.0%	95.7%
Region 5 - DI		92.3%	96.0%	100%	100%	100%	100%
<b>TOTAL</b>		<b>90.7%</b>	<b>91.3%</b>	<b>91.9%</b>	<b>93.3%</b>	<b>94.4%</b>	<b>94.9%</b>

**Percent of Transient Non-Community Water Systems Meeting ALL Health Based Standards**  
**CY 2006 – 2012**

*Milestone 2: By 2016, 95% of transient non-community water systems that meet health-based drinking water standards.<sup>1</sup>*

	2006 % of Systems	2007 % of Systems	2008 % of Systems	2009 % of Systems	2010 % of Systems	2011 % of Systems	2012 % of Systems
Illinois	98.0%	97.7%	98.6%	97.4%	97.8%	98.6%	100%
Indiana	89.2%	88.9%	89.8%	90.5%	91.2%	92.1%	92.4%
Michigan	96.5%	96.8%	96.6%	96.7%	96.9%	97.5%	97.6%
Minnesota	95.2%	95.5%	95.5%	97.0%	96.3%	95.9%	96.2%
Ohio	88.9%	92.8%	93.2%	92.4%	92.6%	92.1%	92.7%
Wisconsin	96.8%	96.7%	96.8%	97.1%	96.4%	97.0%	97.3%
Region 5 - DI	100%	100%	100%	100%	100%	100.0%	100.0%
<b>TOTAL</b>	<b>95.2%</b>	<b>95.6%</b>	<b>95.8%</b>	<b>96.0%</b>	<b>95.9%</b>	<b>96.3%</b>	<b>96.7%</b>

<sup>1</sup> These new targets were finalized and sent to the States 7/25/07.



**Percent of Population Served By Community Water Systems With Significant/Major Monitoring Violations**  
**CY 2006 - 2012**

*Milestone 3: By 2016, improve drinking water system compliance so less than 5% of the population is served by community water systems have significant/major monitoring violations for all applicable rules.*

	2006 % of Population	2007 % of Population	2008 % of Population	2009 % of Population	2010 % of Population	2011 % of Population	2012* % of Population
Illinois	9.1%	10.5%	3.8%	2.4%	3.0%	1.9%	2.8%
Indiana	22.5%	5.4%	5.5%	5.5%	3.2%	3.5%	3.9%
Michigan	1.7%	2.9%	2.8%	0.7%	0.3%	2.6%	4.0%
Minnesota	0.5%	2.0%	1.1%	0.3%	0.3%	0.5%	0.9%
Ohio	4.9%	3.4%	2.9%	2.7%	4.2%	2.0%	16.2%
Wisconsin	28.4%	21.6%	8.1%	9.2%	1.3%	3.3%	6.2%
Region 5 - DI	16.1%	20.7%	20.4%	15.6%	22.9%	10.2%	7.2%
<b>TOTAL</b>	<b>9.2%</b>	<b>7.1%</b>	<b>3.8%</b>	<b>3.0%</b>	<b>2.5%</b>	<b>2.3%</b>	<b>6.4%</b>

2012

\*Without the LCR Type 66 violation, consumer notification, IL is at 2.0%, IN is at 3.8%, MN is at 0.7%, OH is 15.1%, WI is at 2.0%, and TOTAL is at 5.5%. Region 5 – DI and MI percentages did not change with the exclusion of Type 66 violation.

## Percent of Community Water Systems With Significant/Major Monitoring Violations CY 2006 - 2012

**Milestone 4:** *By 2016, improve drinking water system compliance so less than 10% of community water systems have significant/major monitoring violations for all applicable violations.*

	2006 % of Systems	2007 % of Systems	2008 % of Systems	2009 % of Systems	2010* % of Systems	2011* % of Systems	2012* % of Systems
Illinois	13.2%	17.2%	9.5%	8.4%	11.5%	9.2%	9.5%
Indiana	16.7%	20.8%	19.7%	18.1%	16.0%	14.1%	16.3%
Michigan	7.4%	8.3%	6.2%	5.2%	5.2%	5.0%	7.1%
Minnesota	4.6%	6.7%	6.1%	3.2%	2.5%	4.0%	10.2%
Ohio	18.0%	17.4%	16.2%	12.4%	23.8%	15.3%	16.0%
Wisconsin	12.0%	18.4%	10.6%	12.1%	8.5%	10.6%	18.7%
Region 5 - DI	19.5%	19.5%	15.4%	10.4%	42.9%	17.7%	17.1%
<b>TOTAL</b>	<b>12.1%</b>	<b>14.7%</b>	<b>10.9%</b>	<b>9.5%</b>	<b>11.6%</b>	<b>9.6%</b>	<b>12.4%</b>

### 2010

\* This is the first year with significant reporting of the LCR Type 66 violation, consumer notification, which contributed to the increase in IL and OH. Without those violations in comparison to previous years IL is at 8.7% and OH is 15.7%.

### 2011

\* Without the LCR Type 66 violation, consumer notification, IL is at 6.0%, MN is at 3.9%, OH is 10.3%, WI is at 9.3%, and TOTAL is at 7.8%. IN, MI, and Region 5 – DI percentages do not change with the exclusion of Type 66 violations.

### 2012

\* Without the LCR Type 66 violation, consumer notification, IL is at 8.4%, IN is at 15.9%, MN is at 7.8%, OH is 10.6%, WI is at 8.9%, and TOTAL is at 9.4%. MI and Region 5 – DI percentages do not change with the exclusion of Type 66 violations.

**Percent of Non-Transient Non-Community Water Systems With Significant/Major  
Monitoring Violations for acute health risks  
(nitrate, microbiological, and surface water treatment)  
CY 2006 – 2012**

***Milestone 5: By 2016, improve drinking water system compliance so that less than 5% of non-transient non-community water systems have significant monitoring violations for acute health risks. (TCR, Nitrate, GWR)***

	2006 % of Systems	2007 % of Systems	2008 % of Systems	2009 % of Systems	2010 % of Systems	2011 % of Systems	2012 % of Systems
Illinois	3.3%	4.1%	1.0%	2.0%	3.1%	2.0%	0.5%
Indiana	12.2%	12.5%	<del>15.9</del> 17.7%	12.1%	11.1%	12.0%	6.4%
Michigan	8.0%	7.1%	<del>6.3</del> 6.8%	5.7%	4.5%	4.2%	5.2%
Minnesota	0.7%	0.9%	0%	0.2%	0.4%	0.0%	1.6%
Ohio	15.1%	11.4%	<del>7.4</del> 9.4%	7.0%	7.2%	6.5%	7.8%
Wisconsin	9.1%	9.5%	<del>6.0</del> 6.5%	7.9%	4.6%	6.6%	6.7%
Region 5 - DI	3.8%	3.8%	0%	9.1%	11.5%	8.3%	17.4%
<b>TOTAL</b>	<b>8.9%</b>	<b>8.1%</b>	<b><del>7.4</del> 8.3%</b>	<b>6.2%</b>	<b>5.3%</b>	<b>5.4%</b>	<b>5.3%</b>

**Percent of Non-Transient Non-Community Water Systems With Significant/Major  
Monitoring Violations for chronic health risks  
CY 2006 - 2012**

***Milestone 6: By 2016, improve drinking water system compliance so that less than 10% of non-transient non-community water systems have significant monitoring violations for chronic health risks for all applicable rules.***

	2006 % of Systems	2007 % of Systems	2008 % of Systems	2009 % of Systems	2010 % of Systems	2011** % of Systems	2012 ** % of Systems
Illinois	21.5%	40.7%	29.1%	24.3%	37.1%	25.7%	24.4%
Indiana	8.5%	12.7%	42.7-16.6%	11.3%	10.6%	5.2%	7.1%
Michigan	12.3%	17.5%	9.2 10.4%	7.9%	12.1%	5.4%	4.5%
Minnesota	4.2%	5.5%	8.3%	7.3%	2.7%	5.9%	5.8%
Ohio	18.1%	22.0%	48.5 20.0%	11.8%	12.5% 29.5%^	6.7%	6.7%
Wisconsin	4.3%	4.4%	2.5 2.7%	2.5%	4.1%	1.6%	2.1%
Region 5 - DI	23.1%	11.5%	8.0%	13.6%	23.1%	0.0%	26.1%
<b>TOTAL</b>	<b>11.3%</b>	<b>15.9%</b>	<b>44.6 12.8%</b>	<b>9.4%</b>	<b>11.7% 44.5%^</b>	<b>6.8%</b>	<b>6.9%</b>

2010

^ After discussion at the State Director's Meeting, it was agreed that the Type 66 LCR violation for consumer notification should not count as a chronic health M&R violation. The new statistics show the measure with those violations excluded.

2011 and 2012

\*\* Type 66 LCR violation for consumer notification is not counted as a chronic health M&R violation in this table.

## Percent of Transient Non-Community Water Systems With Significant/Major Monitoring Violations CY 2006 - 2012

**Milestone 7:** By 2016, improve drinking water system compliance so less than 10% of transient non-community water systems have significant monitoring violations for all applicable rules.

	2006 % of Systems	2007 % of Systems	2008 % of Systems	2009 % of Systems	2010 % of Systems	2011 % of Systems	2012 % of Systems
Illinois	1.8%	2.0%	1.2%	1.9%	3.6%	1.1%	0.1%
Indiana	32.2%	39.1%	42.1%	37.2%	10.7%	29.0%	23.6%
Michigan	9.7%	10.0%	10.5%	8.5%	12.4%	7.6%	7.5%
Minnesota	0.6%	0.6%	0.5%	0.8%	1.3%	0.5%	0.7%
Ohio	34.4%	27.1%	23.1%	18.3%	6.0%	18.1%	19.6%
Wisconsin	7.3%	4.6%	4.5%	5.0%	1.2%	2.5%	2.5%
Region 5 - DI	0%	11.1%	14.3%	0%	0.1%	25.0%	50.0%
<b>TOTAL</b>	<b>10.8%</b>	<b>10.0%</b>	<b>9.9%</b>	<b>8.8%</b>	<b>8.3%</b>	<b>7.0%</b>	<b>6.6%</b>

U. S. Environmental Protection Agency  
Public Water System Supervision Program

**Final Report**

**Review of the  
Drinking Water Program  
Minnesota Department of Health**

*Prepared by The Cadmus Group, Inc.  
for  
The Environmental Protection Agency  
Office of Ground Water & Drinking Water  
November 14, 2012*

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## **List of Acronyms**

ALE - Action Level Exceedance  
ARDP - Annual Resource Deployment Plan  
ARRA - American Reinvestment and Recovery Act  
CCR - Consumer Confidence Reports  
CCT – Corrosion Control Treatment  
CDS - Compliance Decision System  
CDX - Central Data Exchange  
CPI – Consumer Price Index  
CT - Contact Time  
CWS - Community Water System  
CWSRF - Clean Water State Revolving Fund  
DBCP - Dibromochloropropane  
DBPR - Disinfectants/Disinfection By-Products Rule  
DIME - Direct Implementation Management Environment  
DWSRF - Drinking Water State Revolving Fund  
EDB - Ethylene Dibromide  
EDI - Electronic Data Interface  
EPA – Environmental Protection Agency  
EPTDS - Entry Point to the Distribution System  
ERG – Expense Reimbursement Grant  
ERP - Enforcement Response Policy  
ESS - Electronic Sanitary Survey  
ETT – Enforcement Targeting Tool  
FANLs - Facility Analyte Levels  
FBRR - Filter Backwash Recycling Rule  
FTP - File Transfer Protocol  
FY – Fiscal Year  
GWUDI - Ground Water under the Direct Influence of Surface Water  
GWR - Ground Water Rule  
HAA5s - Haloacetic Acids  
IESWTR - Interim Enhanced Surface Water Treatment Rule  
IOC - Inorganic Chemicals  
IT - Information Technology  
LCR - Lead and Copper Rule  
LCRMR - Lead and Copper Rule Minor Revisions  
LCR STR - Lead and Copper Rule Short-Term Revisions  
LIMS - Laboratory Information Management System  
LT1ESWTR - Long-Term 1 Enhanced Surface Water Treatment Rule  
LT2ESWTR - Long-Term 2 Enhanced Surface Water Treatment Rule  
MCL - Maximum Contaminant Level  
MDH - Minnesota Department of Health  
MDH DWP – Minnesota Department of Health Drinking Water Protection Section  
MDL - Method Detection Level  
MNDWIS – Minnesota Drinking Water Information System



MOA – Memorandum of Agreement  
MOR - Monthly Operating Report  
M/R - Monitoring and Reporting  
MRDL - Maximum Residual Disinfectant Level  
NCWS - Noncommunity Water System  
NOV - Notice of Violation  
NPDES - National Pollutant Discharge and Elimination System  
NPDWR - National Primary Drinking Water Regulations  
NRWA - National Rural Water Association  
NTNCWS - Nontransient Noncommunity Water System  
OCCT - Optimal Corrosion Control Treatment  
ODS - Operational Data System  
PE - Public Education (for the LCR)  
PHL – Public Health Laboratory  
PN - Public Notification  
PR - Program Review  
PWS - Public Water System  
PWSS - Public Water System Supervision  
PWSSP – Public Water System Supervision Program  
QA - Quality Assurance  
RAA - Running Annual Average  
R&C – Reliably and Consistently  
SDWA - Safe Drinking Water Act  
SDWIS/Fed - Federal Safe Drinking Water Information System  
SDWIS/Fed Rep - SDWIS Federal Reporting System  
SMF – Standard Monitoring Framework under the Phase 2/5 Rule  
SNC - Significant Non-Complier  
SOC - Synthetic Organic Chemicals  
SWAP - Source Water Assessment Program  
SWTR - Surface Water Treatment Rule  
SSWR1 - State Safe Drinking Water Information System Web Release version 1  
SSWR2 - State Safe Drinking Water Information System Web Release version 2  
TCR - Total Coliform Rule  
TMF – Technical, managerial, and financial (the three key components of capacity development)  
TNCWS – Transient Noncommunity Water System  
TOC - Total Organic Carbon  
TSWM – Triggered Source Water Monitoring  
TTHM - Total Trihalomethanes  
VOC - Volatile Organic Compounds  
WQP - Water Quality Parameters  
XML - Extensible Markup Language

## I. Introduction

### A. Purpose of Review

During the week of September 17, 2012, the “team,” consisting of representatives of EPA Headquarters, Nancy Ho; EPA Region 5, Janet Kuefler; and The Cadmus Group, Inc., Laurie Potter, Jeffe Kennedy and Danielle Poulin; conducted a File Review of the Minnesota Department of Health (MDH) drinking water program in their central office in St. Paul, Minnesota. MDH is the primacy agency, and the MDH Drinking Water Protection section (DWP) is responsible for administering and enforcing the requirements of the SDWA. This review serves a number of purposes:

- To verify whether information in the MDH DWP databases and files is correctly represented in the federal Safe Drinking Water Information System (SDWIS/Fed), Cadmus compared MDH DWP’s data to the most recently frozen data in SDWIS/Fed (i.e., the July 2, 2012 frozen database, which includes state data for the quarter ending March 31, 2012);
- To evaluate whether the MDH DWP is determining compliance in accordance with the National Primary Drinking Water Regulations (NPDWRs). MDH DWP’s actions and policies were compared to federally mandated rules and policies;
- To identify specific actions that will improve MDH DWP’s public water system supervision (PWSS) programs. Recommendations for MDH DWP are listed in this report that should improve their program;
- To determine whether MDH DWP has implemented recommendations identified in the 2007 review. EPA Region 5 asked the state to comment on the recommendations from the previous report and reviewed the answers against the current audit findings (Appendix A contains the list of recommendations and the state answers);

The project included both interviews and file review. Both EPA Region 5 and Cadmus conducted interviews with the state. Observations from the interviews are integrated into the report below. The team also reviewed a sample of public water systems (PWSs) to verify system compliance and state oversight.

### B. Description of Sample

Rather than reviewing every PWS supervised by MDH DWP, the team examined a sample of those systems, with the intention that the sample set would provide insight into the PWSS program. Table 1 identifies the number of systems in the sample set reviewed by the team. The team reviewed 11 community water systems (CWS), 3 nontransient noncommunity water systems (NTNCWSs), and 7 transient noncommunity water systems (TNCWSs). Systems were selected by EPA Headquarters with

input from EPA Region 5. The sample set was based on several factors including a focus on CWS, surface water systems, systems from various delegated local programs, and systems with high numbers of health-based violations. The sample set was also partially based on the system's Enforcement Targeting Tool (ETT) score.

<b>Table 1: Number of PWSs Reviewed by the Team</b>					
	<b>Very Large &gt; 100,000</b>	<b>Large 10,001- 100,000</b>	<b>Medium 3,301- 10,000</b>	<b>Small 501-3,300</b>	<b>Very Small &lt; 500</b>
Number Reviewed by Size		5	3	4	9
Number Reviewed by Source <sup>1</sup>					
Ground Water		0	2	4	5
Surface Water		5	1		4
GWP					
SWP/GUP					
<sup>1</sup> SW = Surface Water, GU = Ground Water Under the Direct Influence of Surface Water, P = Purchased					

### C. Regulations Reviewed

The team reviewed MDH DWP's hard copy files and had access to the program's data system, Minnesota Drinking Water Information System (MNDWIS), for updates to inventory and compliance data for the rules listed in Table 2.

The period of review for each of the regulations is shown in Table 2. Appendix B contains a table that summarizes any data discrepancies between state and federal records and errors in compliance determination that were identified during this review. Appendix C contains a detailed, system-specific list of each discrepancy identified during this review.

<b>Table 2: Periods of Review</b>	
<b>Category</b>	<b>Date</b>
Inventory	Most recent
CCR	Year 2010, due 2011
Sanitary Survey	2 most recent surveys
Total Coliform Rule	Apr. 1, 2011 - Mar. 31, 2012
Lead & Copper Rule	2 most recent sample sets
Phase II/V (except nitrate)	2008 - 2010
Nitrate	2010, 2011
Stage 1 & 2 DBPR (triennial)	2008- 2010
(annual or quarterly)	Apr. 1, 2011 - Mar. 31, 2012
Revised Radionuclides	Most recent samples
SWTR, IESWTR,	Apr. 1, 2011 - Mar. 31, 2012
LT1 & 2 ESWTR	Apr. 1, 2011 - Mar. 31, 2012
GWR	July 1, 2011 through June 30, 2012
Public Notice	Per related violation

## II. Primacy Agency Program Summary

This section outlines the program's organizational structure, its waiver program, assistance provided by the state to systems, MNDWIS data system, and information about sample collection/analysis and laboratories. Each section also outlines successes and challenges from the previous and current reviews, plus recommendations, if warranted, that may help the state improve their program.

### A. Program Administration

MDH DWP maintains primacy over all CWSs, NTNCWSs and TNCWSs. MDH DWP has delegated the authority of implementation of the SDWA to 15 local programs, covering 22 counties, and to U.S. Department of Agriculture's National Forest Service. Local programs have delegated authority for transient systems only. This authority is extended to only TNCWS that are licensed (including restaurants, motels, hotels, resorts, and campgrounds) by the local programs, and the TNCWS in National Forests (about 50 Forest Service TNCWS, per January 2013 SDWIS data). Appendix D includes a map that shows the delegated programs and a list of the counties under the program, including the number of systems that each delegated program oversees.

#### *Program Administration Successes*

- There have been significant successes and challenges related to implementing this program, including negotiating new delegation agreements in June 2010 with 15 local programs, and hiring a planner whose duties include evaluating the implementation of the newly signed delegation agreements. In 2012, three program evaluations/audits were completed. In addition, delegated program staff has been given access to MNDWIS. Staff are now able to directly document sanitary survey findings as well as significant deficiencies and enter sample results where a delegated program does their own laboratory analyses. For example, when a new positive coliform bacteria sample is entered into MNDWIS, an "incident" will be created in Incident Tracking-Bacti Investigations (incident tracker). The confirmation and repeat samples linked to the original positive will also be displayed under the same incident. The MDH guidance manual for delegated program staff specifies information to include in the incident report, an example, and a template incident report on a CD. Local program staff have access to the district section of the Incident Tracking-Bacti investigations.

#### *Program Administration Challenges*

- MDH DWP notes that the guidance manual for delegated programs needs to be updated to note this process.

*Recommendations*

- MDH DWP should continue to evaluate its delegation criteria to ensure timely and complete data reporting by delegated program.

**B. Program Resources and Funding**

*Program Resources Challenges*

- During the review, MDH DWP informed the file review staff that the agency had undergone a mandatory state shutdown during most of July 2011 when state lawmakers were deciding on a budget agreement. The shutdown ended on July 20, 2011, and affected MDH DWP's compliance determinations with certain drinking water rules. To ensure Total Coliform Rule (TCR) sampling was conducted on behalf of water systems, MDH DWP delayed and re-prioritized compliance determinations for the other rules that was not the Total Coliform Rule.

*Recommendations*

- Ensuring that public water systems provide safe drinking water to its customers is an essential function that affects human health. MDH DWP should ensure that if a future statewide government shutdown occurs, the agency has an adequate number of staff members exempt from the shutdown so that public water systems have available staff that is officially on duty to provide assistance and support to water systems as they provide safe drinking water.

***MDH DWP Response to Recommendation:** We concur that providing drinking water that meets all NPDWRs for the citizens of Minnesota and those visiting the state are an essential function that affects human health and is a function that should be staffed in the event of a state shut down. We believe that we have made significant progress in staffing to meet this essential function from the previous state shut down. In preparation for a shut down, we provide to the court our case for meeting the essential function criteria. The court makes the final decision.*

**C. Training**

The following potential training areas have been identified by EPA Region 5 and MDH DWP: TCR invalidation criteria, TCR begin and end dates for reporting to SDWIS, Public Notification documentation, in addition to training related to calculating running annual averages.

## D. Data Systems

MDH DWP developed MNDWIS, which uses an Oracle database with a Power Builder interface. The state has committed resources to ensuring that the system is constantly updated to permit the program to administer the NPDWRs. The state also uses “1Suite” software to store scanned documents, and some of the scanned information is linked to MNDWIS. For example, sanitary surveys can be accessed from MNDWIS through a link to 1Suite.

Delegated programs have direct access to MNDWIS to enter information from sanitary surveys and can enter information in the district section of the Incident Tracking-Bacti Investigations portion of the database. However, delegated programs cannot update inventory directly, they must work through an MDH DWP compliance officer to have inventory updated.

MNDWIS calculates compliance for monitoring and reporting (M/R) for all rules. Other violations are calculated by MNDWIS, but must be verified manually before the violation is considered official. For instance, the rule manager calculates total organic carbon (TOC) averages outside MNDWIS in a separate spreadsheet.

### *Data Systems Successes*

- Most data are received electronically, including all sample results from the state lab, and many private labs, as well as scanned MORs from many surface water treatment facilities. Hard copy data are entered into MNDWIS and then scanned into 1Suite. Delegated program laboratories also send data electronically.
- The schedules for many systems in MNDWIS are quite detailed and the data system allows tremendous flexibility. The flows from sources to the treatment plant are depicted schematically. The system also stores historical flow information. For example, sometimes an entry point is taken off-line when a new treatment plant is brought on-line. The historic schedules and flows for the inactivated entry point are easily accessible, if needed for a historic review of water quality and operations. Waivers are indicated and the timeframe shown, as well as when the sampling is done and the monitoring requirements are met.

### *Data Systems Challenges*

- The state cites QA/QC as a critical data management challenge.
- The program notes the lack of a long-range plan for data management –or the resources to implement a plan, if prepared – as a challenge.

- Three data reporting challenges have been noted. First, when a lab changes its laboratory information management system (LIMS), it must also maintain/regain compatibility with MNDWIS. Second, federal reporting guidance is not always timely and clear. And third, the state's ongoing project to centralize information technology (IT) services makes it difficult for the drinking water program to meet its reporting requirements.

#### *Data Systems Recommendations*

- MDH DWP should ensure timely reporting of data from the laboratory and delegated programs such that MDH DWP is able to report violations in a complete and timely manner to EPA.
- MDH DWP should continue to ensure implementation of long range data management planning to address the data reporting challenges noted above.

#### **E. Compliance Determination**

MDH DWP does not have any rules that are more stringent than the federal rules promulgated under the Safe Drinking Water Act (SDWA).

#### *Compliance Determination Findings*

- MDH DWP enforces requirements for all NPDWRs. However, not all violations are assigned and reported to EPA.
  - ✓ In its FY13 work plan with EPA Region 5, MDH DWP concurred that PN violations are tracked but systems are not assigned violations.
  - ✓ In the FY13 work plan, MDH DWP committed to begin reporting several violations that they had not previously reported, including LCR Type 66 consumer notice violations by May 2012, LT2ESWTR, Stage 2 DBPR and GWR violations by 2013.

***R5/MDH DWP comment:** MDH DWP has begun reporting LCR Type 66 violations, however, as of the October 2012 frozen database, MDH DWP has not yet reported under the other rules listed above. To date, Minnesota PWSs have not had LT2ESWTR violations. MDH is now using Fed Rep version 3.4, so has the capability of reporting GWR violations.*

- For LCR Type 66 lead consumer notice violations, the state noted some misunderstanding on how to return to compliance (RTC), especially when the system completed the notification, but did not submit the certification. For example, the federal guidance does

not include standard language for Type 66 violations that can be put in the CCR stating that this violation occurred.

**Region 5 comment:** *MDH DWP confirmed that they do not RTC a system until the certification is received or notice of the violation is put in the CCR, whichever comes first. Region 5 believes this is appropriate. Region 5 will follow up with MDH DWP to ensure that implementation is at least as stringent as the federal rule.*

- The 2007 program review report recommended that MDH DWP ensure timely reporting to EPA. MDH DWP noted that the state has had periodic issues with ensuring that all violations are entered into MNDWIS.
- In the grant work plan, EPA Region 5 asked MDH DWP to report any TCR M/R violations which had not yet been RTC to MNDWIS, rather than enter all old violations in the system, and asked the state to ensure that all current violations were being entered. In response, MDH DWP explained that the issue flagged in the 2007 report concerned a violation that was found on a compliance officer's desk in a delegated program, but not entered into SDWIS/Fed. Delegated programs do not have full access to MNDWIS, and MDH DWP has yet to put in place protocols to ensure that the programs will report violations in a timely manner.

**Region 5 response:** *As described above, labs from several delegated programs can now report electronically data directly in MNDWIS, and delegated programs have access to MNDWIS.*

**MDH DWP comment:** *We believe that all current violations are being entered. The 3-delegated programs that have laboratories report laboratory data to MNDWIS. This is an IT process not compliance process. The same protocol is being followed in entering violations regardless if the source of data is from PHL, contract lab, district lab or delegated program laboratory.*

- Beginning in 2013, MDH DWP plans to send all NTNCWSs a calendar that shows: all SDWA monitoring requirements (including samples to be collected by the systems and samples that will be collected by MDH DWP); current water operators' certification status and renewal date; inventory data currently in MNDWIS; and other information that MDH DWP wishes to share with systems.

#### *Compliance Determination Challenges*

- MDH DWP cites internal QA/QC before compliance determinations are made as a critical challenge. MDH DWP staff review violations generated by MNDWIS and make manual comparisons of posted and submitted data.



### *Recommendations*

- MDH DWP should meet its schedule to begin reporting Stage 2 DBPR, LT2ESWTR, and GWR violations in 2013.
- MDH DWP should ensure that the delegated programs submit violations in a timely manner.
- MDH DWP should continuously evaluate its delegation criteria to ensure that timely and complete data reporting is being achieved at the delegated programs level.

## **F. Sample Collection and Analysis**

Sample collection and analysis were not extensively discussed during this review, but the state provided insights on their program in their responses to the questionnaire.

### *Sampling and Analysis Successes*

- All labs that provide analysis for MDH DWP perform QA/QC of their data.
- MDH DWP does not have more stringent regulations for the LCR or the Stage 2 DBPR. However, several practices are more stringent and MDH DWP voluntarily takes additional samples in some instances:
  - ✓ For any system with a copper action level exceedance (ALE) that does not have corrosion control treatment (CCT), the state will begin 6-month monitoring to see if two rounds are below the ALE and the system can RTC.
  - ✓ For water quality parameter (WQP) monitoring at small CWSs and NCWSs that have implemented CCT, MDH DWP samples at a minimum of 2 sites.
  - ✓ If a NTNCWS misses annual or triennial LCR monitoring, the state returns the system to standard, 6-month monitoring for two rounds of samples.
  - ✓ Under Stage 2 DBPR, MDH DWP samples at dual sites.
- Monitoring is conducted by both MDH DWP and systems, although MDH DWP does most sampling (see the table below).
- Most sample results (99 percent) are sent electronically from the state lab, delegated program and contract labs to the central office. The state lab submits data nightly. Positive results for the TCR are reported by all labs within 24 hours. Three delegated programs analyze their own samples and can now enter their results directly into MNDWIS, including Countryside and Olmsted (bacteriological and nitrate) and Southwest Health and Human Services (bacteriological only). Also, disinfection/turbidity reports for surface water systems are sent on paper copies. Please note that Clay County also provides nitrate and bacteriological analysis for delegated transient systems.

- For systems conducting increased monitoring, such as NTNCWS collecting LCR samples, those treating for nitrate or arsenic removal, and those utilizing chlorine, MDH DWP sends monitoring reminder letters or postcards prior to the end of the monitoring period, sometimes more than once.
- District field staff are carbon copied on all detects.

Responsibility for Sample Collection			
Rule		MDH DWP	System
TCR:	Routine	CWSs < 1,000 NCWS < 1,000	CWSs ≥ 1,000 NCWS ≥ 1,000 NCWS on quarterly or NCWS on surface water
	Repeat	Systems < 1,000 <i>E. Coli</i> for all systems	Systems ≥ 1,000 <i>E. Coli</i> for all systems
Nitrate		NCWSs <sup>1</sup> (including source and EP samples for systems with nitrate treatment)	CWSs NCWSs with nitrate treatment on quarterly sampling (approx. 4 NTNCWS and 34 TNCWS)
IOC		All	NTNCWS with arsenic treatment conduct quarterly sampling (approx. 14 systems) (beginning in 2013).
VOC		All	
SOC		All	
Radionuclides		All	
Fluoride			All
LCR			All
SWTR			All
DBPR		TTHM/HAA5, TOC All (systems ≤ 1,000) Chlorine residual sample collected at the same time/location as TCR sample(s) <sup>2</sup>	Chlorine residual sample collected at same time/location as TCR sample(s) All (systems > 1,000 ): Bromate/Bromide
GWR		TSWM (systems ≤ 1,000) Assessment monitoring	TSWM (systems > 1000)
Quarterly sampling after MCL		NCWSs	CWSs

<sup>1</sup> State does not conduct sampling for NCWSs with nitrate treatment on quarterly sampling (approx. 4 NTNCWS and 34 TNCWS) <sup>2</sup> As of the writing of this report, MDH DWP has instructed staff to collect sample to meet requirement to sample for chlorine residual at same time/location as TCR sample(s)

### *Sampling and Analysis Challenges*

- State did not collect sample to meet requirement to sample for chlorine residual at same time/location as TCR sample(s).

### *Recommendations*

- None.

## III. Program Implementation

This section outlines program implementation, successes and challenges from the previous and current reviews, and recommendations that may help MDH DWP improve their program.

### General Program

MDH DWP's waiver policy has not changed since 2007.

### *General Successes*

- MDH DWP has approval for all NPDWRs.

### *Recommendations*

- None.

### A. Inventory

MDH DWP's inventory information is maintained in MNDWIS.

### *Inventory Successes*

- No discrepancies were found for inventory. The data were exemplary.

### *Recommendations*

- None.

**Table 3: Primacy Status for Minnesota**

Rules	Primacy Revision Application or Program Update	
	Status	Date
New PWS Definition	Approved	18Dec06
Administrative Penalty Authority	Approved	18Dec06
CCR Rule	Approved	18Dec06
IESWTR	Approved	24Nov08
Stage 1 DBPR	Approved	24Nov08
LCR Minor Revisions	Approved	24Nov08
PN Rule	Approved	24Nov08
Radionuclides Rule	Approved	24Nov08
Arsenic Rule	Approved	24Nov08
Filter Backwash Rule	Approved	24Nov08
LT1 Rule	Approved	24Nov08
Variances and Exemptions Rule	Approved	18Dec06
Operator Certification Program	Approved	01Jul01
Operator Certification ERG	Approved	01Feb03
Stage 2 DBPR	Approved	16Apr12
LT2 Rule	Approved	16Apr12
Ground Water Rule	Approved	16Apr12
LCR STR	Approved	16Apr12

## **B. Sanitary Survey**

Hard copies of sanitary surveys are maintained in the system files, and all surveys are scanned into 1Suite.

### *Sanitary Survey Successes*

- No discrepancies were detected for either sanitary survey frequency or missing elements in the report. All surveys contained the eight elements required under the IESWTR and GWR.

### *Recommendations*

- None.

## **C. Consumer Confidence Report Rule**

Consumer Confidence Reports (CCR) and certifications are stored in the system files.

### *Consumer Confidence Report Rule Successes*

- In most cases, CCRs were sent and certified on time and were present in the files.
- In their FY12 and FY13 work plan, EPA Region 5 approved an MDH DWP pilot program for electronic delivery of CCRs, in lieu of mailing.

### *Consumer Confidence Report Rule Challenges*

- One discrepancy was issued for a failure to assign an M/R for a late CCR. MDH DWP does not issue a notice of violation (NOV) for late CCRs until October 1, when the certification is due.

### *Recommendations*

- An M/R must be issued for any CCR postmarked later than July 1.

## **D. Total Coliform Rule**

### *Total Coliform Rule Successes*

- TCR data are received electronically in all but three delegated programs.

- The NCWS Unit's policy is to collect one additional sample 30 days following four absent repeat samples.

#### *Total Coliform Rule Challenges*

- Five MCL and three M/R discrepancies were detected for TCR. Of the five MCL discrepancies, 3 were for CWS and 2 for TNCWS; of the three M/R discrepancies, 1 was for a CWS and 2 were for TNCWS.
- MDH DWP demonstrated careful tracking for this rule. The discrepancies assigned were for state policies that varied from the federal requirements.
- Per MDH Community Public Water System (CPWS) Unit procedures, any positive sample instigates a site investigation, where repeat samples are collected by the District Engineer and the potential for contamination is examined. As required, if the repeat samples indicate total coliform presence at a site other than the original routine sample site that was positive, a non-acute NOV is issued.

***MDH DWP/Region 5 comment:*** *The above requirement is for systems collecting fewer than 40 samples per month, for routine total coliform positive (E. coli absent) samples; for NCWS, if any repeat total coliform positive sample is positive, a monthly (non-acute) MCL is reported. Region 5 will follow up with the state on this procedure to ensure that it is as stringent as the federal requirements, and that if a routine sample is total and E.coli positive, and a repeat sample is total coliform positive, that the system is issued an acute MCL violation.*

- When a site investigation identifies suspected contamination of the original routine TCR sample, the MDH DWP field staff should invalidate the routine sample in writing and collect a replacement sample as soon as possible. The replacement sample should be counted for compliance, even if it's collected in the following month.

***Region 5 comment:*** *Invalidation in this context is defined as not counting as meeting the TCR sampling requirement. The regulations allow for such invalidation when the suspected contamination of the original TCR sample is due to domestic or a non-distribution system plumbing problem. Region 5 will follow-up with NCWS staff regarding procedures currently in place to confirm a violation prior to issuing a violation, to ensure that they are at least as stringent as the federal requirements.*

- If the sample invalidation is not documented, the sample should be included in compliance calculations. Three discrepancies were assigned when the state did not invalidate positive samples in writing. In the three instances, the system had more than one positive sample and an MCL should have been assigned.

- If the reason for the contamination can be determined during the site investigation, and the problem remedied, the state may issue a written waiver from the requirement to collect 5 routine samples in the following month. However, without the written waiver, the team expects to see the increased monitoring. One M/R discrepancy occurred when the system did not increase routine monitoring to 5 samples in the month after a positive sample result.

***Region 5 comment:** Although this does not impact the one instance in the file review where this occurred, we believe that sufficient documentation to meet the regulatory requirement is needed, but it does not necessarily have to take the form of a written waiver, especially for sampling that the state or delegated program will be doing.*

- Two discrepancies were assigned because no replacement sample was collected within two weeks after a sample was invalidated. The state did not assign an M/R violation because the invalidated sample was received during the monitoring period. An M/R should have been issued with a begin date associated with the monitoring period for the routine sample.

***Region 5 comment:** The two-week timeframe is used as guidance for purposes of the file review only; this is not found in regulation. The regulation calls for re-sampling within 24-hours, with an allowance that the state may waive the 24-hour time limit on a case-by-case basis.*

- MDH DWP sets the begin date for an MCL violation to be the date that the first set of repeat samples was collected. The begin date should be associated with the monitoring period for the routine sample. Two discrepancies were identified for this reporting problem.

***Region 5 comment:** The Region will work with the state on appropriate reporting of begin dates for TCR violations.*

- One practice of MDH DWP is less stringent than the federal requirement. In its FY13 work plan with EPA Region 5, the state committed to reduce the number of TCR samples that the state accepts that have exceeded the 30 hour holding time. No discrepancies were found for this issue in the review. However, no samples should be accepted for compliance that exceed the 30-hour holding time.

***MDH DWP comment:*** MDH DWP has determined that less than 3% of samples received exceed the 30-hour hold time. MDH DWP has committed to reject samples over the 30-hour hold time and work with specific systems where this problem is occurring.

- Six violations assigned by MDH DWP and reported to SDWIS/Fed were verified by the team, 4 M/R and 2 MCL violations.

#### *Recommendations*

- MDH DWP should assign an M/R violation when a system fails to collect a valid replacement sample within two weeks after a sample is invalidated. The violation begin date should be tied to monitoring period associated with the positive routine sample.
- When MDH DWP conducts a site investigation after a positive sample, determines the cause of the contamination and ensures that the problem has been addressed, the state may issue a waiver from increased monitoring in the following month. Without any documentation of this, the increased monitoring must be conducted or an M/R assigned for failure to increase to a minimum of 5 samples.
- For all PWSs collecting fewer than 40 samples/month, MDH DWP must assign an MCL violation when more than one TCR sample is positive, unless samples are invalidated in writing.
- The begin date of an MCL violation should be associated with the monitoring period the routine sample, not the date of the first set of repeat samples.

***Region 5 comment:*** Region 5 will work with the state on reporting of begin and end dates for TCR violations.

#### **E. Phase II/V Rule**

MDH DWP offers many of the standard monitoring reductions and waivers allowed by regulation.

##### *Phase II/V Rules Successes*

- MDH DWP has a management report in MNDWIS to track when monitoring is missed.

##### *Phase II/V Rules Challenges*

- One M/R discrepancy was identified for inorganic chemicals (IOCs), one MCL discrepancy for arsenic, and another M/R discrepancy for arsenic.

- One discrepancy was assigned when MDH DWP did not assign an MCL for arsenic. The MDH DWP field staff believed the problem was resolved after a site visit. When an MCL occurred in the next quarter, an MCL was assigned for the second quarter but not the first.
- One M/R discrepancy was assigned for failure to continue quarterly monitoring after an MCL for arsenic. MDH DWP policy is to discontinue quarterly monitoring until after corrective action is taken. Although the system had been deemed reliably and consistently (R&C) below the MCL in a prior year, quarterly monitoring must continue after an MCL until R&C can be demonstrated again, regardless of corrective actions taken.
- When no nitrate sampling was completed during a monitoring period, MDH DWP did not assign an M/R violation because the state is responsible for sample collection. However, the M/R violation should be assigned, as the rule states that the system is responsible for monitoring. MDH DWP noted that since it is their responsibility to monitor, the very few instances where it is not done on time due to an emergency; it is done as soon as possible. This course of action is documented in the annual grant work plan with the Region.

***Region 5 comment:** In future grant workplans, we will clarify that reporting of violations must be done, even in cases where MDH DWP or a delegated program has performed the monitoring.*

- The state created rolling compliance periods for the Phase II/V Rule, which does not conform to the standard monitoring framework (SMF). One IOC M/R was assigned for failure to meet the monitoring requirements outlined in the SMF.

***MDH DWP comment:** MDH DWP determined that automatic scheduling by MNDWIS has caused initial and second round samples to be scheduled further apart than they should be. This is in the process of being corrected by IT staff and by training of compliance staff. When it is corrected samples will be collected within the periods of the SMF and will actually be more restrictive than federal requirements.*

- One nitrate M/R and two arsenic MCL violations that were reported to SDWIS/Fed were verified by the team.

#### *Recommendations*

- MDH DWP should assign an M/R violation if a sample round is missed, even if they are responsible for sample collection.



- All compliance samples for the Phase II/V rule must be collected at the entry point or an M/R violation should be assigned.

***Region 5 comment:** As described above, the regulations allow the state to designate another sampling point representative of all sources after treatment.*

- MDH DWP may not use rolling compliance periods for the Phase II/V Rule: all systems' monitoring schedules should conform to the SMF.
- Systems should be placed on quarterly sampling schedules after an MCL until R&C can be demonstrated. Failure to monitor should be assigned an M/R violation.

**Region 5 comment:** In February 2013, R5 and the MDH DWP discussed appropriate enforcement action and monitoring after an MCL for about 45 chem/rad MCL violations in the State.

## F. Ground Water Rule

MDH DWP is implementing the GWR. Triggered source water monitoring data are stored in MNDWIS.

### *GWR Challenges*

- Two M/R discrepancies were identified for a system that failed to take a triggered source water sample at all sources within 24 hours of notification of a total coliform positive. MDH DWP noted that only 6 of 17 sources were operating when the violations occurred, but documentation of this operating pattern was not provided.

MNDWIS does not have the ability to report GWR violations. In their FY13 work plan with EPA Region 5, MDH DWP agreed that by early 2012, the state will have completed programming for the GWR. MDH DWP did not commit to track violations for failure to collect samples within 24 hours, although they will strive to meet this requirement. (EPA Region 5 accepted this response.) Based on the MDH DWP's response, they are not meeting the requirements. The requirement in the rule is to collect samples within 24 hours, unless the state modifies and documents an extension of the requirement. If this requirement is not met, it is a violation and it must to be identified in the data system and tracked.

***R5 comment:** MDH now uses Fed Rep 3.4, and has the capability of reporting GWR violations.*

**MDH comment:** *Since MDH DWP staff conduct an assessment of the water supply system, we have allowed more than 24 hours for repeat samples. We believe that the assessment protects public health better than just getting a repeat sample within a certain timeframe. This certainly is an RTCR issue as well and we will be required in our primacy application to document how we will address the situation when the repeat samples are not collected within 24 hours and what level of documentation (“transaction document”) will be expected. Since we are collecting the repeat sample and conducting the assessment we will not issue a violation if it is not done within 24 hours.*

**R5 comment:** *The Region will work with MDH DWP to ensure adequate documentation is in place.*

#### *Recommendations*

- MDH DWP should ensure that triggered source water monitoring always occurs at all operating sources within 24 hours of notification of a total coliform positive sample, unless the state approves a representative monitoring plan.
- MDH DWP should confirm that all M/R violations are tracked and reported to EPA.

#### **G. Stage 1 and Stage 2 Disinfectant and Disinfection By-Products Rules**

Documents that were submitted for Stage 2, including 40/30 certifications, Standard Monitoring Plans, and Very Small System waivers, are stored in separate files and scanned into 1Suite. Most compliance monitoring calculations are completed in MNDWIS.

##### *Stage 1 and Stage 2 Disinfectant and Disinfection By-Products Rules Successes*

###### Stage 1:

- MDH DWP asks systems to do total organic carbon (TOC) monitoring, but pays for the analyses and sends results to systems. Until recently, all plants received a summary of quarterly averages for all plants in the state, which sparked initial competition among plants to improve their finished water. Now, MDH DWP sends monthly data, which systems use to closely monitor plant performance.

###### Stage 2:

- No discrepancies were identified. Implementation of this rule was completed early and carefully tracked.

*Stage 1 and Stage 2 Disinfectant and Disinfection By-Products Rules Challenges*

Stage 1:

- Stage 1 DBPR received 36 M/R discrepancies.
- 32 of the 36 M/R violations were assigned for failure to calculate quarterly and running annual averages (RAA) for the distribution system chlorine residual monitoring. The averages are not calculated automatically. If the monthly values are near 4 mg/L, which is the maximum residual disinfectant level (MRDL), then the DBPR rule managers receive an automatic email from MNDWIS. Mostly, they determine that the value was due to a typo. If the value is actually high, then the MDH DWP field staff follows up with the system. The follow-up is tracked manually.

***R5 comments:** Programming to calculate the RAA automatically was established shortly after the 2007 file review and is available. However, the averages were still calculated automatically. Training has been scheduled to fix this. Nonetheless, MDH DWP has a procedure which may be considered more stringent than flagging calculated RAA values for MRDLs, under the DBPR, which is an automated practice where when a single MRDL exceeds 4.0, MNDWIS sends an e-mail to the compliance officer. The state does have programming in MNDWIS to calculate RAAs, but has found that flagging individual values to be more effective so that any single value exceeding the MRDL gets attention. The Region acknowledges that the work is being done to comply with the intent of the rule, but it is not being done in strict accordance with the rule.*

- Lab capacity was stretched to address TOC analyses in the past. Due to the timing required (48 hour holding time), the systems must know the schedule for sample collection at their post office and closely monitor when they sample to ensure compliance. With the reduction of post office hours, this challenge is greater and some systems in the Iron Range (more than 200 miles from St. Paul) are not always able to meet the schedule. The lab has to reject the samples and request resamples. No discrepancies were detected during the review.
- During early years of implementation, MDH PHL personnel sometimes added preservative to TOC samples, which is incorrect. (The sample bottles resembled other sample bottles that required preservative.) Therefore, samples were invalidated. The problem has been resolved, as the lab continued staff training. No discrepancies were detected during the review.
- If more than one paired sample for TOC is collected, the values should be averaged together to get a monthly average for compliance. One system collected two paired

samples. The removal ratio for each was calculated, which is correct, but each removal ratio was used in the RAA, rather than being averaged together for a monthly average. One discrepancy was assigned.

- Three M/R discrepancies were assigned when systems did not collect an equal number of TCR and disinfectant residual samples. During training, the MDH DWP emphasizes that distribution total chlorine residual also should be collected with repeat samples. However some MDH DWP field staff are not collecting it either when they collect samples during the sanitary survey or when they collect repeat samples. Also, MDH DWP was not aware that these MRDL samples should be included in the monthly, quarterly and running annual averages.

#### *Recommendations*

- MDH DWP should ensure that the number of chlorine residual samples matches the number of all compliance TCR samples, including both routine and repeat samples.
- The number of chlorine residuals taken each month, along with their monthly, quarterly and running annual averages, should be reported each quarter by the systems. The calculations also may be performed by MDH DWP.
- If more than one paired sample for TOC is collected, the values should be averaged together to get a monthly average for compliance.

### **H. Radionuclides Rule**

Most systems are monitoring for gross alpha, radium-226 and -228 and uranium on a routine basis.

#### *Radionuclides Rule Successes*

- No discrepancies were identified for radionuclides. This rule is carefully tracked.
- Two MCL violations reported to SDWIS/Fed were verified by the team.

#### *Recommendations*

- None.

### **I. Lead and Copper Rule**

MDH DWP tracks compliance for the LCR in MNDWIS. The state does not currently have an alternate four-month monitoring schedule: all annual and triennial samples must be collected between June and September

***Region 5 comment:** Please note the exception to the LCR sample collection timeframe of June-September for schools and daycares which are closed June-September; due to lack of representativeness of the samples, Region 5 does not want the system to sample immediately upon start-up after Labor Day, so allows October sampling for these systems.*

#### *Lead and Copper Rule Successes*

- No discrepancies were identified. MDH DWP implementation of this complicated rule is exemplary.
- The FY13 work plan with EPA Region 5 notes that MDH DWP should ensure that year-round child care facilities complete monitoring for lead and copper between June 1 and September 30, unless the system's file documents an alternative timeframe and reasons for it. No discrepancies were noted in the review, as no systems of this type were reviewed.
- Fifteen lead 90<sup>th</sup> percentile values, one tap sampling M/R, and one M/R for failure to provide consumer notice for high lead results were verified by the team.

#### *Recommendations*

- MDH DWP should ensure that year-round child care facilities complete monitoring in the 4-month timeframe specified by the rule, as noted in their FY13 work plan with EPA Region 5.

#### **J. Surface Water Treatment Rule, Interim and Long Term 1 and 2 Enhanced Surface Water Treatment Rules**

Eleven non-purchased surface water systems were included in this review. Correspondence and LT2ESWTR documents are in hard copy files and scanned into 1Suite for NCWSs. Monthly operating reports are stored in files.

#### *Surface Water Treatment Rules-Related Challenges*

- The team assigned 22 M/R discrepancies and 4 treatment technique (TT) violations.
- The team assigned 22 discrepancies because MDH DWP has not been issuing violations for late monthly operating reports (MORs). DWP noted that District Engineer and Rule

Compliance Engineer pay regular visits to verify compliance and ensure surface water systems meet the ESWTR monitoring requirements, including turbidimeter calibration/verification.

***MDH DWP comment:** To prevent similar incidents from repeating, MDH DWP will improve on communicating with water systems to turn in the reports on/before the 10th day of the following month, and highlight reporting deadlines on the "Annual Monitoring Schedule" that MDH DWP provides to each CPWS, starting in 2013.*

- When entry point chlorine residual levels fell below the 0.2 mg/L threshold specified in the SWTR for one system, MDH DWP field staff discussed the chlorine residual levels during a site visit/inspection in the next month. However, no TT violation was assigned, which resulted in one discrepancy.
- Four discrepancies were assigned for failure to issue a TT violation when more than 5 percent of the turbidity samples for the month were above 0.3 NTU. Two discrepancies occurred because MDH DWP did not assign two monthly violations, as the engineer believed the problem was the turbidimeter. (A violation was assigned to this system after the third month of high values.)
- One discrepancy was assigned for missing M/R violation for bi-weekly *E. coli* monitoring under the LT2ESWTR. The system's sample was rejected and not replaced, but no M/R violation was assigned.
- Late bin determination caused one M/R violation discrepancy. The delay occurred while MDH DWP waited for EPA to provide information needed to make the determination.
- One TT violation for LT1ESWTR reported to SDWIS/Fed was verified by the team.

#### *Recommendations*

- M/R violations should be assigned when MORs are received late. In their response to questions about late MORs, MDH DWP noted they will encourage water systems to turn in the reports on/before the 10th day of the following month and highlight reporting deadlines on the "Annual Monitoring Schedule" that MDH DWP provides to each CWS, starting in 2013.
- A TT should be assigned in each month that the entry point chlorine residual falls below the threshold for more than four hours.
- M/R violations should be assigned when invalidated samples are not replaced.

- Compliance samples should be collected if a system is open even one day in a compliance period or M/R violations should be assigned.
- An M/R violation should have been assigned when the bin determination was completed late for one system.

**Region 5 comment:** *We acknowledge that the state was waiting for information from EPA's DCTS data system which was not working as intended, in order to be able to make the bin determination.*

#### **K. Public Notifications Rule**

The team only reviewed Tier 1 and Tier 2 public notification (PN) violations. Proof of PN is maintained in the hard copy files, scanned into 1Suite, and dates of PN request are tracked in MNDWIS.

##### *Public Notification Successes*

- Files consistently contained letters showing PN was requested and proof was received. PN documentation and tracking overall was good.

**Region 5 comment:** *Region 5 will follow up with MDH DWP related to enforcement verification finding for the PN rule.*

##### *Public Notification Challenges*

- One PN discrepancy was identified. A system's turbidimeter was thought to be failing and no NOV was issued for two months when high turbidity values were detected. However, when a third treatment technique exceedance occurred, a violation was assigned. No proof of PN was provided for this third month's treatment technique violation.

##### *Recommendations*

- A PN violation should be assigned for any treatment technique violation.

**Appendix A  
Status of Previous Recommendations**



**Questions on Minnesota's Corrective Actions since the 2007 Review**

**The final report for the 2007 Minnesota Department of Health (DPH) Review identified major and minor implementation concerns. Questions follow on how the recommendations of the report and from EPA Region 5 were implemented.**

Question	Answer	Comments and Explanations
MDH DWP should ensure that all systems without waivers sample according to their monitoring schedule as federally dictated. Failures to monitor should be assigned appropriate violations regardless of sampling responsibility.	What has MDH DWP done to follow this recommendation?	<p>MDH DWP has a management report in MNDWIS to track when monitoring is missed. Since it is the State's responsibility to monitor, the very few instances where it is not done on time due to an emergency, it is done as soon as possible. The State is not issuing violations to the system when the State fails to sample on time, but assures EPA R5 that is a rare event. This course of action is documented in the annual grant work plan with Region 5.</p> <p><i>Region 5 comment: The Region acknowledged this temporary disinvestment, but Region 5 and the MDH DWP will revisit this requirement to ensure complete reporting to SDWIS.</i></p>
MDH DWP should ensure that all violations are entered into MNDWIS for timely reporting to SDWIS/Fed.	What has MDH DWP done to follow this recommendation?	<p>MDH DWP has had periodic issues with ensuring that all violations are entered into MNDWIS. For example, several years ago the State did not get all TCR data entered, which was evident by looking at the 5-year violation trends in the Logic Model Reporting Tool. The Region documented this in the grant work plan, and asked the state to report any violations which had not yet been RTC'd to MNDWIS, instead of spending the time putting old violations in the system, and ensure that all current violation reporting was being entered.</p> <p><i>MDH DWP comment: This pertained to a delegated program. Delegated programs don't have full access to MNDWIS. We will report violations as quickly as we can but we cannot guarantee that it can't happen again.</i></p>

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Question	Answer	Comments and Explanations
Stage 1 DBPR monthly and running annual averages should be calculated and reported to the state as required by the regulation. MDH DWP notes that they have made this a priority to be programmed into MNDWIS.	What has MDH DWP done to follow this recommendation?	This was corrected shortly after the last data verification.
MDH DWP should require WQP monitoring according to federal regulations, even if chemical corrosion control is not deemed feasible for the system in question.	What has MDH DWP done to follow this recommendation?	We require WQP monitoring according to federal regulations.
As already requested by Region 5, MDH DWP should revise the LCR SOP so it does not allow validation sampling when the 90th percentile result of annual or triennial reduced or follow-up monitoring exceeds 15 µg/L lead and 1,300 µg/L copper.	What has MDH DWP done to follow this recommendation?	MDH DWP does not allow validation sampling
MDH DWP should develop a written policy on LCR initial monitoring for new systems.	What has MDH DWP done to follow this recommendation?	Notification of initial monitoring is programmed into MNDWIS.
MDH DWP should ensure that systems take annual or triennial samples in the designated months.	What has MDH DWP done to follow this recommendation?	Region 5 has allowed the State to take samples at schools and daycares under the LCR in October, since many schools are closed June-Labor Day. This is documented in the annual grant work plan.

**Appendix B  
Summary of Discrepancies Identified by Rule**

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Rule	Compliance Determination (CD)		Data Flow (DF)	
	M/R	MCL/TT	M/R	MCL/TT
Inventory	-	-	-	-
Sanitary Surveys	-	-	-	-
Consumer Confidence Reports	CWS: 1	-	-	-
Total Coliform Rule	CWS: 1 TNCWS: 2	CWS: 3 TNCWS: 2	-	-
Nitrate/Nitrite	TNCWS: 1	-	-	-
Ground Water Rule	CWS: 2	-	-	-
Inorganics (IOCs)	CWS: 1 NTNCWS: 3	NTNCWS: 1	-	-
Volatile Organics (VOCs)	-	-	-	-
Synthetic Organics (SOCs)	-	-	-	-
Stage 1 DBPR	CWS:36	-	-	-
Stage 2 DBPR	-	-	-	-
Surface Water Treatment Rules (SWTR, IESWTR, LTIESWTR, LT2ESWTR)	CWS: 20 TNCWS: 2	-	-	TNCWS: 4
Radionuclide Contaminants	-	-	-	-
Lead and Copper (LCR)	-	-	-	-
Public Notification	TNCWS: 1	-	-	-

**Appendix C  
Summary of Discrepancies Identified by System**

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<b>PWSID</b>	<b>PWS Name</b>	<b>Delegated Authority</b>	<b>System Type</b>	<b>Rule</b>	<b>Violation or Compliance Begin Date(s)</b>	<b>Question</b>	<b>Supporting Details</b>	<b>State Response</b>	<b>Discrepancy Resolution</b>
MN5860373	Good Shepherd Free Lutheran Church	MDH DWP	NTNCWS	AR	4/1/10	System exceeded the MCL for arsenic based on a running annual average but an MCL violation was not found. Why not?	In second and third quarters of 2010, arsenic exceeded the MCL based on the calculation over the previous four quarters. An MCL was assigned for the fourth quarter of 2010, but not for the preceeding quarters.	2Q10 NOV not issued, PWS had work done on the well that was thought to have contributed to a biased high Arsenic concentration. Additional quarterly monitoring conducted. 3Q10 NOV was issued.	Discrepancy resolved for third quarter but remains for second quarter as MCL should have been assigned and reported.
MN5860373	Good Shepherd Free Lutheran Church	MDH DWP	NTNCWS	AR	10/1/10	System failed to increase to quarterly monitoring following a detection. Why weren't violations assigned?	In the 2008-2010 compliance cycle, system detected arsenic in 1Q08. A confirmation sample was taken, but did not increase to quarterly monitoring until 2009. Also, no sample taken in 4Q10.	System had been on qrtly monitoring and deemed R&C below the MCL (1Q08). 2009 Detect Interim (annual) sampling caused the R&C status to be revoked and PWS placed back on qrtly. 4Q10 sample not taken due to suspension of monitoring after an MCL NOV (MN NTNC does not continue monitoring after an MCL until corrective action has been taken).	Discrepancies for 2008 monitoring removed. However, M/R should be assigned for 4Q10, as system may not cease quarterly sampling until system is R&C below the MCL.
MN1400003	Elysian	MDH DWP	CWS	CCR	7/1/11	CCR was provided to the state after the July 1 deadline, why wasn't a violation assigned?	2010 CCR was received on 7/6/11.	We do not issue NOV's for late CCRs until Oct 1.	Discrepancy stands. An M/R should be issued for any CCR postmarked later than July 1.

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PWSID	PWS Name	Delegated Authority	System Type	Rule	Violation or Compliance Begin Date(s)	Question	Supporting Details	State Response	Discrepancy Resolution
MN1140008	Moorhead	MDH DWP	CWS	DBP1	10/1/11	TOC removal calculations not performed correctly. Why wasn't a violation assigned?	In October 2011, system took 2 paired samples. The removal ratio for each was calculated, which is correct, but it appears each removal ratio was used in the RAA, rather than being averaged together for a monthly average.	MDH DWP compliance engineer calculated incorrect TOC removal calculation and was not aware mistake is a violation. Sept 2011 TOC/Alkanity samples were collected during emergency, when ozone system was down and system switched to 100% groundwater supply to reduce DBPs. When fixed, PWS switched back to surface water and collected a second set of TOC and alkalinity samples for month. MDH DWP used all 13 set of TOC results to calculate compliance. Should state have averaged the Oct results, ignored the Sept samples, and divided the sum by 11?	Because these calculations are part of the reporting requirements for the rule, an incorrect calculation, whether performed by the system or state, is a reporting violation. Multiple paired samples should be averaged for a monthly removal ratio, and method outlined in response (average Oct results, sum 11 months of data, and divide by 11) is correct. Discrepancy stands.
MN1140008	Moorhead	MDH DWP	CWS	DBP1	4/1/11, 7/1/11, 10/1/11, 1/1/12	Quarterly and running annual averages not calculated. Why wasn't a violation assigned?	Did not find the calculations for the chlorine residual MRDLs. In addition, in March 2012, 44 TCR samples were taken (40 reported by system in summary report plus 4 extra by state staff) and it's not	MRDL RAAs are calculated manually when triggered by results above the MRDL.	Discrepancies stand.

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PWSID	PWS Name	Delegated Authority	System Type	Rule	Violation or Compliance Begin Date(s)	Question	Supporting Details	State Response	Discrepancy Resolution
							clear if those chlorine residuals were calculated with the other averages.		
MN1190002	Burnsville	MDH DWP	CWS	DBP1	4/1/11, 7/1/11, 10/1/11, 1/1/12	No quarterly or RAA was calculated for the distribution chlorine residual (MRDL) collected at the same time and place as the TCR samples. Why wasn't a violation assigned?	For 12 months from 4/1/11 - 3/31/12.	MRDL RAAs are calculated manually when triggered by results above the MRDL.	Discrepancies stand.
MN1200001	Claremont	MDH DWP	CWS	DBP1	4/1/11, 7/1/11, 10/1/11, 1/1/12	No quarterly or RAA was calculated for the distribution chlorine residual (MRDL) collected at the same time and place as the TCR samples. Why wasn't a violation assigned?	For 12 months from 4/1/11 - 3/31/12.	MRDL RAAs are calculated manually when triggered by results above the MRDL.	Discrepancies stand.



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PWSID	PWS Name	Delegated Authority	System Type	Rule	Violation or Compliance Begin Date(s)	Question	Supporting Details	State Response	Discrepancy Resolution
MN1460003	Fairmont	MDH DWP	CWS	DBP1	4/1/11, 7/1/11, 10/1/11, 1/1/12	Quarterly and running annual averages not calculated. Why wasn't a violation assigned?	For 12 months from 4/1/11 - 3/31/12.	MRDL RAAs are calculated manually when triggered by results above the MRDL.	Discrepancies stand.
MN1560014	Fergus Falls	MDH DWP	CWS	DBP1	4/1/11, 7/1/11, 10/1/11, 1/1/12	No quarterly or RAA was calculated for the distribution chlorine residual (MRDL) collected at the same time and place as the TCR samples. Why wasn't a violation assigned?	For 12 months ranging from 4/1/11 - 3/31/12.	MRDL RAAs are calculated manually when triggered by results above the MRDL.	Discrepancies stand.
MN1690046	Virginia	MDH DWP	CWS	DBP1	4/1/11, 7/1/11, 10/1/11, 1/1/12	Quarterly and running annual averages not calculated. Why wasn't a violation assigned?	For 12 months from 4/1/11 - 3/31/12.	MRDL RAAs are calculated manually when triggered by results above the MRDL.	Discrepancies stand.
MN1700029	Elko New Market	MDH DWP	CWS	DBP1	7/1/11, 10/1/11	Fewer MRDL samples were collected than TCR in some months. Why weren't	In July 2011, no MRDL samples were found. In August and September, it appears that the repeat samples do not have	CPWS Unit staff contacted the PWS operator to inform them of need to collect Total Chlorine results from all TCR samples. A TCR and Stage 1 DBP Rule	Discrepancies stand. Documentation of violation not provided and violation not found in SDWIS/Fed.

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PWSID	PWS Name	Delegated Authority	System Type	Rule	Violation or Compliance Begin Date(s)	Question	Supporting Details	State Response	Discrepancy Resolution
						violations assigned?	MRDLs (August: 9 MRDL for 16 TCR, September: 7 MRDL for 9 TCR.)	monitoring violation NOV was issued on August 19, 2011.	
MN1700029	Elko New Market	MDH DWP	CWS	DBP1	4/1/11, 7/1/11, 10/1/11, 1/1/12	Quarterly and running annual averages not calculated. Why wasn't a violation assigned?	For 12 months from 4/1/11 to 3/31/12.	MRDL RAAs are calculated manually when triggered by results above the MRDL.	Discrepancies stand.
MN1730027	Saint Cloud	MDH DWP	CWS	DBP1	4/1/11, 7/1/11, 10/1/11, 1/1/12	No quarterly or RAA was calculated for the distribution chlorine residual (MRDL) collected at the same time and place as the TCR samples. Why wasn't a violation assigned?	For 12 months from 4/1/11 - 3/31/12.	MRDL RAAs are calculated manually when triggered by results above the MRDL.	Discrepancies stand.
MN1820009	Lake Elmo	MDH DWP	CWS	DBP1	10/1/11	Fewer chlorine residual samples were collected than TCR samples in two months. Why wasn't a quarterly violation	In October 2011, only 1 MRDL for 25 TCR samples and in November 2011, only 4 MRDL for 8 TCR samples.	Two distinct hydraulic distribution systems are each supplied by 1 well. July 2011 positive sample(s) occurred in Well #2 distribution. Two October 2011 positive sample(s) occurred in the Well #1 distribution. Note	Discrepancy stands. Chlorine residual samples should be taken at the same time and place as TCR samples, unless a clear sampling plan designates that samples taken in a

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PWSID	PWS Name	Delegated Authority	System Type	Rule	Violation or Compliance Begin Date(s)	Question	Supporting Details	State Response	Discrepancy Resolution
						assigned?		also that Well #1 was sampled following the 10/18/2011 positive at Fire Station #1 on 10/19/2011; Well #1 was sampled following the 10/18/2011 positive at Parks Building on 10/20/2011, 10/24/2011, and 11/08/2011.	chlorine-free distribution system may be exempted.
MN1190002	Burnsville	MDH DWP	CWS	ESWT	5/1/11	System failed to sample during compliance period. Why wasn't a violation assigned?	No monthly turbidity or entry point chlorine residual data was supplied for May 2011.	Report was misplaced; May 2011 Turbidity/ Disinfection Monthly Report was sent on June 10, 2011 with individual turbidimeters calibration date of 3/11/11.	Discrepancy stands. No documentation provided. Reporting violation would be required regardless.
MN1190002	Burnsville	MDH DWP	CWS	ESWT	4/1/11, 5/1/11, 6/1/11, 8/1/11, 9/1/11, 10/1/11, 1/1/11, 1/1/12, 3/1/12	Monthly turbidity and entry point chlorine residual sampling results were received late. Why wasn't a violation assigned?	For 9 months between 4/1/11-3/31/12, results were submitted more than 10 days after the compliance period.	MDH DWP has not been issuing violations for reports turned in a less timely manner, because MDH DWP District Engineer and Rule Compliance Engineer pay regular visits to verify compliance and ensure surface water systems meet the ESWTR monitoring requirements including turbidimeter calibration/verification. To prevent similar incidents from repeating, MDH DWP will improve on communicating with water	Discrepancies stand. Corrective actions noted.

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PWSID	PWS Name	Delegated Authority	System Type	Rule	Violation or Compliance Begin Date(s)	Question	Supporting Details	State Response	Discrepancy Resolution
								systems to turn in the reports on/before the 10th day of the following month, and highlight reporting deadlines on the "Annual Monitoring Schedule" that MDH DWP provides to each CPWS, starting in 2013.	
MN1460003	Fairmont	MDH DWP	CWS	ESWT	7/1/11, 8/1/11	Sampling results were received late. Why wasn't a violation assigned?	Sample results for entry point chlorine residual and turbidity were submitted more than 10 days after the end of the compliance period.	MDH DWP has not been issuing violations for reports turned in a less timely manner, because MDH DWP District Engineer and Rule Compliance Engineer pay regular visits to verify compliance and ensure surface water systems meet the ESWTR monitoring requirements including turbidimeter calibration/verification. To prevent similar incidents from repeating, MDH DWP will improve on communicating with water systems to turn in the reports on/before the 10th day of the following month, and highlight reporting deadlines on the "Annual Monitoring Schedule" that MDH DWP provides to	Discrepancies stand and corrective action noted.

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PWSID	PWS Name	Delegated Authority	System Type	Rule	Violation or Compliance Begin Date(s)	Question	Supporting Details	State Response	Discrepancy Resolution
								each CPWS, starting in 2013.	
MN1190002	Burnsville	MDH DWP	CWS	GWR	5/1/11, 11/1/11	System failed to sample all sources for the GWR after a positive routine TCR sample. Why wasn't a violation assigned?	In May 2011, 6 of 17 sources were sampled. In November 2011, 5 of 17 sources were sampled.	Per GWR, samples from all sources not required. Samples from all sources providing water to the positive site on the day of the positive were required. As this PWS has a single pressure zone and a single Treatment Plant, it seems that 5 and 6 of the 17 wells were operating on the dates of the TCR positives.	Discrepancies stand. The rule interpretation is correct, however there is no documentation of this well activity. It's not clear how the state determines compliance.
MN1700029	Elko New Market	MDH DWP	CWS	IOC	1/1/08	System failed to sample during compliance period. Why wasn't a violation assigned?	System's schedule notes that system is on permanent schedule of 1 sample every 3 year compliance period due to a cyanide issue. Last sampled in 2007 and no sample collected between 2008-2010.	E03 Well #3 Entry Point - Elko: 1 sample within 2006~2009 compliance period (05/01/2007); 1 sample within 2009~2012 compliance period (01/05/2012).  <b>MDH DWP comment:</b> MDH DWP DWP have determined that automatic scheduling by MNDWIS has caused initial and second round samples to be scheduled further apart than they should be. This is in the process of being corrected by IT staff and by	Discrepancy stands. The cited compliance periods do not match the federal compliance periods for Standard Monitoring Framework.

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PWSID	PWS Name	Delegated Authority	System Type	Rule	Violation or Compliance Begin Date(s)	Question	Supporting Details	State Response	Discrepancy Resolution
								<i>training of compliance staff. When it is corrected samples will be collected within the periods of the SMF and will actually be more restrictive than federal requirements.</i>	
MN1690018	Eveleth	MDH DWP	CWS	LT1R	6/1/11, 7/1/11	Sampling results were received late. Why wasn't a violation assigned?	June and July 2011 MORs were not reported until 8/22/11.	MDH DWP has not been issuing violations for reports turned in a less timely manner, because MDH DWP District Engineer and Rule Compliance Engineer pay regular visits to verify compliance and ensure surface water systems meet the ESWTR monitoring requirements including turbidimeter calibration/verification. To prevent similar incidents from repeating, MDH DWP will improve on communicating with water systems to turn in the reports on/before the 10th day of the following month, and highlight reporting deadlines on the "Annual Monitoring Schedule" that MDH DWP provides to each CPWS, starting in	Discrepancies stand. Corrective action noted.

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PWSID	PWS Name	Delegated Authority	System Type	Rule	Violation or Compliance Begin Date(s)	Question	Supporting Details	State Response	Discrepancy Resolution
								2013.	
MN5160137	Adventurous Christians Covenant	MDH DWP	TNCWS	LT1R	5/1/11, 7/1/11	Treatment technique violations weren't cited, why not?	In May and July, system exceeded 0.3 NTU in more than 5% of the samples.	The district engineer was working with the PWS to resolve the issue. Turbidimeter was loaned to PWS to get better readings then determined that meter was reading high.	Discrepancies stand. Treatment technique violations should be assigned and reported for these months - as state did in August - to preserve system history.
MN5390090	Lake Trails Base Camp	MDH DWP	TNCWS	LT1R	6/1/11	System did not meet the treatment technique requirements for all three months of operation in summer of 2011. Why weren't violations assigned?	In June, 30% of samples were over .3 NTU. In July and August each, 6% of samples exceeded .3 NTU.	In June, compliance tracking began on the date the PWS starting serving the public, with 8 of 9 readings below 0.3 NTU. Both July and August meet EPA requirements of >95% of readings below 0.3 NTU based on EPA LT1 Guidance which states 0.349 NTU and below rounds to 0.3 NTU.	Discrepancy remains for June, as still greater than 5% of samples were above the threshold.
MN5690244	Lodge of Whispering Pines	MDH DWP	TNCWS	LT2R	8/1/09	System failed to sample during compliance period. Why wasn't a violation assigned?	Bi-weekly E.coli samples were not found for August 2009.	Samples were collected on 8/17 and 8/24/11 and rejected by the lab. No M/R violation due to samples being submitted during compliance period.	Discrepancy stands. If a replacement sample is not collected after a sample is invalidated by the lab, an M/R violation must be assigned.

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PWSID	PWS Name	Delegated Authority	System Type	Rule	Violation or Compliance Begin Date(s)	Question	Supporting Details	State Response	Discrepancy Resolution
MN1730027	Saint Cloud	MDH DWP	CWS	LT2R	10/1/09	Bin determination occurred after the deadline of 10/1/09. Why wasn't a violation assigned?	System completed 34 months of sampling, rather than 24, so bin determination wasn't completed until 4/23/10.	Water system submitted Intent to Grandfather using USEPA DCTS; MDH DWP was waiting for EPA release of DCTS information for Bin Classification determination.	Discrepancy stands. M/R should have been assigned.
MN5690244	Lodge of Whispering Pines	MDH DWP	TNCWS	NIT	1/1/11	System failed to sample during compliance period. Why wasn't a violation assigned?	No 2011 nitrate value found.	No nitrate sample collected, but violation not assigned because MDH DWP is responsible for sample collection.	Discrepancy stands. Violations must be assigned regardless of the responsible party.
MN5160137	Adventurous Christians Covenant	MDH DWP	TNCWS	PNR	9/1/11	System failed to perform public notification. Why wasn't a violation assigned?	No PN found for August 2011 TT violation.	Public notification was not required by MDH DWP for turbidity TT violation.	Discrepancy stands. Does not meet rule requirements. If state elects to rescind August violation, then PN is not required.
MN1560014	Fergus Falls	MDH DWP	CWS	SWTR	6/1/11	Monthly chlorine residual and turbidity results were not received until after the 10 day reporting deadline, why wasn't a violation assigned?	June 2011 MOR data received 7/27/11.	MDH DWP has not been issuing violations for reports turned in a less timely manner, because MDH DWP District Engineer and Rule Compliance Engineer pay regular visits to verify compliance and ensure surface water systems meet the ESWTR monitoring requirements including	Discrepancy stands. Corrective action noted.



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PWSID	PWS Name	Delegated Authority	System Type	Rule	Violation or Compliance Begin Date(s)	Question	Supporting Details	State Response	Discrepancy Resolution
								turbidimeter calibration/verification. To prevent similar incidents from repeating, MDH DWP will improve on communicating with water systems to turn in the reports on/before the 10th day of the following month, and highlight reporting deadlines on the "Annual Monitoring Schedule" that MDH DWP provides to each CPWS, starting in 2013.	
MN1730027	Saint Cloud	MDH DWP	CWS	SWTR	5/1/11-8/1/11, 10/1/11, 11/1/11, 2/1/12	Turbidity and chlorine residual data were submitted after the reporting deadline. Why wasn't a violation assigned?	For 7 months between 4/1/11 - 3/31/12, data were submitted more than 10 days after the monthly compliance period.	MDH DWP has not been issuing violations for reports turned in a less timely manner, because MDH DWP District Engineer and Rule Compliance Engineer pay regular visits to verify compliance and ensure surface water systems meet the ESWTR monitoring requirements including turbidimeter calibration/verification. To prevent similar incidents from repeating, MDH DWP will improve on communicating with water systems to turn in the	Discrepancies stand. Corrective actions noted.

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PWSID	PWS Name	Delegated Authority	System Type	Rule	Violation or Compliance Begin Date(s)	Question	Supporting Details	State Response	Discrepancy Resolution
								reports on/before the 10th day of the following month, and highlight reporting deadlines on the "Annual Monitoring Schedule" that MDH DWP provides to each CPWS, starting in 2013.	
MN5160415	Way of the Wilderness Canoe Outfitters	MDH DWP	TNCWS	SWTR	5/1/11, 6/1/11	System indicated that for numerous days in the month, the system fell below the threshold of 0.2 mg/L of chlorine residual at the entry point.	For May 2011, noted 11 days and for June 2011, noted 6 days.	The district engineer discussed the chlorine residual levels during the June site visit/inspection. No NOV sent to PWS.	Discrepancies stand. Violations should be assigned.
MN1460003	Fairmont	MDH DWP	CWS	TCR	7/1/11	Pattern of total coliform positives indicates an MCL should have been assigned - why wasn't one assigned?	In July 2011, 3 routine TCR samples were positive. Repeat samples were collected as required and absent. However, more than one positive TC sample (routine and/or repeat) constitutes a monthly MCL.	Per MDH DWP CPWS Unit procedures, positive repeat samples trigger a site visit and further repeat sample collection by the District Engineer. If repeat samples collected by the District Engineer indicate TC presence at a site other than the original, a non-acute NOV is issued. In this particular case, suspected contamination of TCR sample from melting	Discrepancy stands. Does not meet rule requirements unless samples are invalidated and documentation is provided in writing. CFR 141.21 ( c ) (iii)

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PWSID	PWS Name	Delegated Authority	System Type	Rule	Violation or Compliance Begin Date(s)	Question	Supporting Details	State Response	Discrepancy Resolution
								ice (and leaking bottles), combined with all Repeat samples being absent and not triggering District Engineer involvement, indicated that an MCL violation would not be issued.	
MN1700029	Elko New Market	MDH DWP	CWS	TCR	8/1/11, 9/1/11	Pattern of total coliform positives indicates an MCL should have been assigned. Why wasn't one assigned?	In both August and September 2011, 2 routine samples were positive and all repeats were absent. A monthly MCL should be assigned.	Per MDH DWP CPWS Unit procedures, positive repeat samples trigger a site visit and further repeat sample collection by the District Engineer. If repeat samples collected by the District Engineer indicate TC presence at a site other than the Original, a non-acute NOV is issued.	Discrepancies stand. Procedure does not meet rule requirements unless samples are invalidated and documentation is provided in writing. CFR 141.21 (c) (iii)
MN1700029	Elko New Market	MDH DWP	CWS	TCR	9/1/11	System failed to collect 5 routine samples in month after a TCR positive sample and no site visit was conducted.	August routine positive samples should have prompted 5 routine samples in September. Only 4 samples were collected.	MDH DWP did not request 5 routine samples for the month following a positive as this has not been a requirement within our procedures previously.	Discrepancy stands. This is a rule requirement, unless a site investigation is conducted, the problem is identified and resolved, and the requirement is waived in writing. A site visit was not performed.

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PWSID	PWS Name	Delegated Authority	System Type	Rule	Violation or Compliance Begin Date(s)	Question	Supporting Details	State Response	Discrepancy Resolution
MN5160415	Way of the Wilderness Canoe Outfitters	MDH DWP	TNCWS	TCR	6/1/11	System failed to sample during compliance period. Why wasn't a violation assigned?	A sample was taken 6/29/11, but was rejected by the lab. As there was no replacement compliance sample, an M/R violation should be assigned.	No M/R violation due to the sample being submitted even though it was rejected. Time did not allow for replacement sample. July sample collected 7/5/11.	Discrepancy stands. In the absence of a non-invalidated compliance sample, an M/R violation must be assigned.
MN5390090	Lake Trails Base Camp	MDH DWP	TNCWS	TCR	6/1/11	System failed to sample during compliance period. Why wasn't a violation assigned?	One TCR sample listed for June, but was "rejected." Since a compliance sample was not taken, an M/R violation should have been assigned.	No M/R violation sent due to the sample being submitted during compliance period, even though it was rejected.	Discrepancy stands. An M/R violation should have been assigned for failure to collect a replacement and valid compliance sample.
MN5690240	Pine Point Lodge	MDH DWP	TNCWS	TCR	7/1/11, 8/1/11	State assigned TCR acute MCL for August 2011, but pattern of sampling suggests violation should be assigned to July 2011. Why was violation assigned in August?	Routine sample in July 2011 was positive. Repeats showed 2 TC+ and 1 EC+. In August, 8 additional repeat samples were collected, tied to the 2 repeats from August, and 7 were TC+.	The violation is routinely assigned to the date of the first set of four repeats samples where one or more samples is positive for TC, resulting in a monthly MCL violation. The original sample was 7/27/11 and confirmation samples were collected 8/2/11--this is the date used for reporting the violation.	Discrepancies stand due to incorrect violation reporting. Violation should be tied to original routine sample.

**Appendix D  
MDH DWP Delegated Programs:**

**Map of Programs  
List of Counties  
Number of Systems in Each Program**

# Sampling Status Summary

Regulated By: Local Government  
Year: 2012

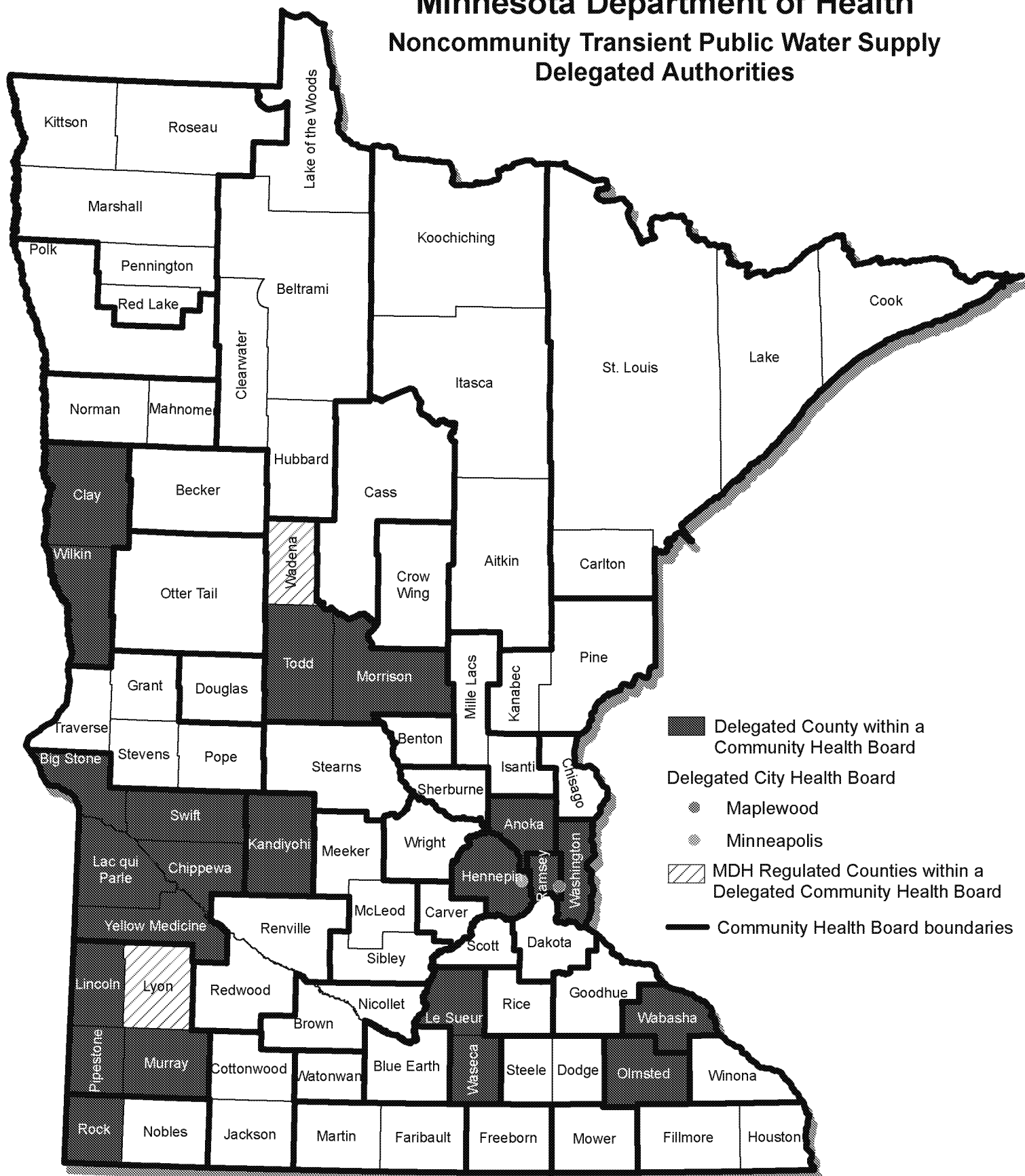
08/15/2012

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Collector	County	# of Systems	Bacti Due	Bacti Complete	Nitrate Due	Nitrate Complete
Anoka County Environmental Services	Anoka	50	52	39	55	41
City of Maplewood	Ramsey	2	2	0	2	0
City of Minneapolis	Hennepin	29	29	29	29	29
Clay County Environmental Health	Clay	11	13	0	14	0
	Wilkin	2	2	0	2	0
Countryside Public Health Service	Big Stone	5	6	0	7	0
	Chippewa	10	10	2	10	2
	Lac qui Parle	2	2	1	2	0
	Swift	8	8	1	8	1
	Yellow Medicine	5	5	3	5	2
Hennepin County Env. Health Mgmt. Group	Hennepin	40	43	1	44	1
Kandiyohi CHS	Kandiyohi	35	49	45	50	48
LeSueur CHS	Le Sueur	27	37	25	37	22
Morrison County Public Health Service	Morrison	51	69	49	70	62
	Todd	47	66	59	68	66
Olmsted County CHS	Olmsted	18	20	0	20	0
Ramsey County Public Health Department	Ramsey	6	6	1	6	0
Southwest Health and Human Services	Lincoln	1	1	0	1	1
	Murray	12	13	1	12	8
Wabasha County Environmental Services	Wabasha	23	34	13	39	21
Waseca Environmental Health	Waseca	9	11	10	11	10
Washington County Department of Health	Washington	54	92	63	79	58
<b>Totals:</b>		447	570	342	571	372

# Minnesota Department of Health

## Noncommunity Transient Public Water Supply Delegated Authorities



July 13, 2012

**Illinois PWSS Indicators and Measures**  
**October 1, 2011 through September 30, 2013**

*NOTE: To access the Quickr links in the "File" column, place cursor over the link and hold down the "Ctrl" key while clicking the left mouse button.*

#	Description	Type	Used For	Name Update Schedule	File	Target	Results Related EOY Comments
Office of Water National Program Measures							
1	% of pop. served by CWS that receive DW that meet health based standards	NPM/ GPRA	PWSS overall	SDW-2.1.1 (Updated quarterly by HQ—NPM Measures Tables filtered for active, non-RTC'd MCL violations)	Quickr: [ <a href="https://epa.qpx.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579E1006DC831.nsf/h_Toc/83D9FCA BDFCC34B5852579E10070F70E/?OpenDocument">HYPERLINK "https://epa.qpx.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579E1006DC831.nsf/h_Toc/83D9FCA BDFCC34B5852579E10070F70E/?OpenDocument"</a> ]	FY10: FY11: 95% FY12: 90% FY13:	FY10: FY11: 96.6% FY12: 96.9% (exceeded) FY13:
2	% of CWS that meet health based standards	NPM/ GPRA	PWSS overall	SDW-SP1.N11 (Updated quarterly by HQ—NPM Measures Tables)	Quickr: [ <a href="https://epa.qpx.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579E1006DC831.nsf/h_Toc/83D9FCA BDFCC34B5852579E10070F70E/?OpenDocument">HYPERLINK "https://epa.qpx.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579E1006DC831.nsf/h_Toc/83D9FCA BDFCC34B5852579E10070F70E/?OpenDocument"</a> ]	FY10: FY11: 91% FY12: 90% FY13:	FY10: FY11: 95.6% FY12: 95.9% (exceeded) FY13:
3	% of "person months" in	NPM/	PWSS	SDW-SP2	Quickr: [	FY10:	FY10:



#	Description	Type	Used For	Name Update Schedule	File	Target	Results Related EOY Comments
	which CWS are meeting health-based standards	GPRA	overall	(Updated quarterly by HQ—NPM Measures Tables)	HYPERLINK "https://epa. gov/QuickPlace /region5state pwssprogram s/PageLibrary 852579E1006 DC831.nsf/h_ Toc/83D9FCA BDFCC34B58 52579E10070 F70E/?OpenD ocument" ]	FY11: 96% FY12: 90% FY13:	FY11: 97.7% FY12: 98.4% (exceeded) FY13:
4	% of CWS with minimized risk b/c of SWP	NPM/ GPRA	PWSS GW SWP	SDW-SP4a (Updated annually in October by States)	Quickr: [ HYPERLINK "https://epa. gov/QuickPlace /region5state pwssprogram s/PageLibrary 852579E1006 DC831.nsf/h_ Toc/416FBD4 32229E39C85 2579E100716 60A/?OpenD ocument&For m=h_PageUI" ]	FY10: FY11: 41% FY12: 50% FY13:	FY10: FY11: 46.8% FY12: 46.5 (not met) FY13:
5	% of population served by CWSs with minimized risk b/c of SWP	NPM/ GPRA	PWSS GW SWP	SDW-SP4b	Quickr: [ HYPERLINK "https://epa. gov/QuickPlace /region5state pwssprogram s/PageLibrary 852579E1006 DC831.nsf/h_ Toc/416FBD4 32229E39C85 2579E100716 60A/?OpenD ocument&For m=h_PageUI" ]	FY11: 65% FY12: 42% FY13:	FY11: 71.2% (met) FY12: 69.9% (exceeded) FY13:

#	Description	Type	Used For	Name Update Schedule	File	Target	Results Related EOY Comments
					v/QuickPlace /region5state pwssprogram s/PageLibrary 852579E1006 DC831.nsf/h_ Toc/416FBD4 32229E39C85 2579E100716 60A/?OpenD ocument&For m=h_PageUI" ]		
6	% of CWS with san. survey w/i the past 3 yrs for Subpart H systems under the IE and LTISWTR	NPM/ GPRA	PWSS SS	SDW-01a (Updated annually in July by HQ – Status queries updated by Region 5 in April and October)	Quickr: [ HYPERLINK "https://epaq px.rtp.epa.go v/QuickPlace /region5state pwssprogram s/PageLibrary 852579E1006 DC831.nsf/h_ Toc/89E2A6F AFEF8233285 2579E10071F 1D8/?OpenD ocument&For m=h_PageUI" ]	FY10: FY11: 88% FY12: 95% FY13:	FY10: FY11: 93.6% (met) FY12: 84.6% (not met) FY13:
7	Fund Utilization Rate for DW SRF	NPM/ GPRA	DWSRF	SDW-04 (Updated annually as of June 30 by HQ and tracked through DWNIMS	Quickr: [ HYPERLINK "https://epaq px.rtp.epa.go v/QuickPlace /region5state	FY10: 85.0% FY11: 80% w ARRA, 80% w base FY12: 90% ARRA, 90% base FY13:	FY10: 94.7% FY11: 91% (surpassed the target) FY12: <u>93% ARRA, 92% base (met)</u> FY13:

#	Description	Type	Used For	Name Update Schedule	File	Target	Results Related EOY Comments
				database)	pwssprogram s/PageLibrary 852579E1006 DC831.nsf/h_ Toc/7999289 0A85C082F85 2579E100724 C64/?OpenD ocument&For m=h_PageUI" ]		
8	# of projects that have initiated operations	NPM/ GPRA	DWSRF	SDW-05 (Updated annually as of June 30 by HQ and tracked through DWNIMS database)	Quickr: [ HYPERLINK "https://epa.gov/QuickPlace/region5statepwssprogram s/PageLibrary 852579E1006 DC831.nsf/h_Toc/7999289 0A85C082F85 2579E100724 C64/?OpenD ocument&Form=h_PageUI" ]	FY10: 165 FY11: 190 w ARRA, 150 w base FY12: 200 ARRA, 160 base FY13:	FY10: 143 (not met) FY11: 158 w ARRA 158 w base FY12: <u>159 ARRA (not met)</u> FY13:
9	% of projects awarded to PWS serving <500, 501-3,300, & 3,301-10,000	NPM/ GPRA	DWSRF	SDW-11 (Updated annually as of June 30 by HQ)	Quickr: [ HYPERLINK "https://epa.gov/QuickPlace/region5statepwssprogram	This is an indicator.	FY11: Through 6/30/11, 70 percent (cumulative) of total DWSRF assistance agreements were with public water systems serving less than 10,001 people.  FY12: <u>72%</u>

#	Description	Type	Used For	Name Update Schedule	File	Target	Results Related EOY Comments
					s/PageLibrary 852579E1006 DC831.nsf/h_ Toc/606F7A8 219792C7A8 52579E10073 0A1F/?Open Document&F orm=h_Page UI" ]		FY13:
10	# & % of small CWS and NTNCWS (<500, 501-3,300, & 3,301-10,000) w repeat health-based NO <sub>3</sub> & NO <sub>2</sub> , Stage 1 D/DBP, SWTR, & TCR violations	NPM/ GPRA	PWSS	SDW-15 (Updated annually in October by HQ)	Quickr: [ HYPERLINK "https://epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579E1006DC831.nsf/h_Toc/770D16D6E49B156C852579E1007356D6/?OpenDocument&Form=h_PageUI" ]	This is an indicator.	FY10: FY11: In FY11, there were 7 of 1966 (0.4%) of small CWSs and NTNCWs with repeat health-based NO <sub>3</sub> and NO <sub>2</sub> , Stage 1 D/DBP, SWTR, and TCR violations. FY12: 10 out of 1978 or 0.5% FY13:
11	# & % of schools and childcare centers that meet all health-based DW standards	NPM/ GPRA	PWSS	SDW-17 (Updated annually in October by HQ, but can be generated from quarterly NPM measure)	Quickr: [ HYPERLINK "https://epa.gov/QuickPlace/region5statepwssprograms/PageLibrary	This is an indicator.	FY10: FY11: In FY11, 188 out of 204 (92%) of Illinois schools and childcare centers meet all health-based drinking water standards. FY12: 196 out of 201 or 97.5% FY13:

#	Description	Type	Used For	Name Update Schedule	File	Target	Results Related EOY Comments
					852579E1006 DC831.nsf/h_ Toc/770D16D 6E49B156C85 2579E100735 6D6/?OpenD ocument&For m=h_PageUI" ]		
Office of Enforcement and Compliance Assistance National Program Measure							
12	During FY2012, the primacy agency must address with a formal enf action or RTC the # of priority systems equal to the # of its PWSs that have a score of 11 or higher on the July 2011 ETT report	NPM/ OECA	PWSS ECA	SDWA02 (Updated quarterly by HQ)	Quickr: [ HYPERLINK "https://epaq px.rtp.epa.go v/QuickPlace /region5state pwssprogram s/PageLibrary 852579BF004 E27F5.nsf/h_ Toc/91C4919 AB0ACBD98 52579BF0051 F67D/?Open Document&F orm=h_Page UI" ]	FY10: FY11: 110 FY12: FY13:	FY10: FY11: Based on July 2011 freeze = 221 systems (41 from the original 42, plus an additional 180 that were more recently ≥ 11) FY12: IL's commitment is to address 70 systems. As of July 2012 they have addressed 80 systems indicating 114% of their goal is met. For IL 26 systems have an ETT of 11 or more. FY13:
Regional Shared Goals							
13	1. % of people served by CWSs meeting <u>existing</u> health based standards 2. % of people served by CWSs meeting <u>new</u>	Shared Goals		(Updated annually in April by Region 5)	Quickr: [ HYPERLINK "https://epaq px.rtp.epa.go v/QuickPlace	By CY2011: 1 = ≥95% 2 = ≥90% 3 = ≥95% 4 = ≥90%	For CY2010: 1 = 99.4% 2 = 97.4% 3 = 97.8% 4 = 96.4%

#	Description	Type	Used For	Name Update Schedule	File	Target	Results Related EOY Comments
	health based standards 3. % of CWSs meeting <u>existing</u> health based standards 4. % of CWSs meeting <u>new</u> health based standards 5. % of <u>NTNCWSs</u> meeting <u>existing</u> health based standards 6. % of <u>NTNCWSs</u> meeting <u>new</u> health based standards 7. % of <u>TNCWSs</u> meeting all health based standards 8. % of population served by CWSs with <u>significant/major monitoring violations</u> 9. % of CWSs with <u>significant /major monitoring violations</u> 10. % of <u>NTNCWSs</u> with significant/major monitoring violations for <u>acute</u> health risks 11. % of <u>NTNCWSs</u> with significant/major monitoring violations for <u>chronic</u> health risks 12. % of <u>TNCWSs</u> with significant/major monitoring violations.				/region5state pwssprogram s/PageLibrary 852579BF004 E27F5.nsf/h_ Toc/BBE0546 2326C9C9285 2579BF00590 A54/?OpenD ocument&For m=h_PageUI" ]	5 = ≥95% 6 = ≥90% 7 = ≥95% 8 = <5% 9 = <10% 10 = <10% 11 = <10% 12 = <10%	5 = 97.2% 6 = 98.6% 7 = 97.8% 8 = 3.0% 9 = 11.5% 10 = 3.1% 11 = 37.1% 12 = 3.6%  For CY2011: 1 = 98.7% 2 = 97.8% 3 = 98.1% 4 = 97.7% 5 = 98.0% 6 = 97.5% 7 = 98.6% 8 = 1.9% 9 = 9.2% 10 = 2.0% 11 = 25.7% 12 = 1.1%
Regional Program Oversight Measures							
14	# & % Violations/Yr	Logic Model Reporting Tool (LMRT)		A6(1) (Updated annually in July by HQ)	Quickr: [ HYPERLINK "https://epa.gov/QuickPlace /region5state		July 2012 Comment – Logic Model queries from the the 2007 -2011 period demonstrate a wide range of of Tier 1 violations (range = 14-142 annually) with the high value in 2010.. A grand total of 27,125 NPDWR

#	Description	Type	Used For	Name Update Schedule	File	Target	Results Related EOY Comments
					pwssprogram s/PageLibrary 852579BF004 E27F5.nsf/h_ Toc/D66E8C9 03441233485 2579BF0059C 6E0/?OpenD ocument&For m=h_PageUI" ]		violations occurred in IL during the 2007 through 2011 timeframe, representing 433 Tier 1, 1,888 Tier 2, and 24,804 Tier 3 violations. 2011 is a low year for tier 1 and 2 type violations with 14 tier 1 and 236 tier 2 type violations.
15	Cumulative # & % <u>Non-TCR/SWTR Violations</u> Responded to/Yr	LMRT		O6(1) (Updated annually in July by HQ)	Quickr: [ HYPERLINK "https://epa.qpx.rtp.epa.gov/QuickPlace/region5statepwssprogram s/PageLibrary 852579BF004 E27F5.nsf/h_Toc/D66E8C9 03441233485 2579BF0059C 6E0/?OpenD ocument&Form=h_PageUI" ]		July 2012: Most Chem/Rad/DBP violations were at very small systems of size 500 or less. In 2007, out of 5735 violations, 93.4% were responded to by 2008. In 2008, out of 4510 violations 99.4% were responded to by 2009. In 2009, out of 4217 violations, 99.2% were responded to by 2010. In 2010, out of 4780 violations, 87.1% were responded to by 2011.
16	Cumulative # & % <u>TCR/SWTR Violations</u> Responded to/Yr	LMRT		O6(1b) (Updated annually in July by HQ)	Quickr: [ HYPERLINK "https://epa.qpx.rtp.epa.gov/QuickPlace		July 2012 comment – For the years 2007 through 2009 there was a very small number of systems in violation with no response reported after one year. In 2007 there were 742

#	Description	Type	Used For	Name Update Schedule	File	Target	Results Related EOY Comments
					/region5state pwssprogram s/PageLibrary 852579BF004 E27F5.nsf/h_ Toc/D66E8C9 03441233485 2579BF0059C 6E0/?OpenD ocument&For m=h_PageUI" ]		TCR/SWTR/FBRR violations and by 2008 all but 9 were responded to for a response rate of 98.8%. In 2008 there were 525 violations with only 3 with no response by 2009 for a response rate of 99.4%. In 2009 out of 492 violations only 8 were no response reported for a response rate of 98.4% by 2010. For 2007, 2008, 2009 all of the non-responses were to very small systems under 500.
17	Cumulative # & % <u>"other"</u> <u>Violations</u> Responded to/Yr	LMRT		O6(1c) (Updated annually in July by HQ)	Quickr: [ HYPERLINK "https://epaq px.rtp.epa.go v/QuickPlace /region5state pwssprogram s/PageLibrary 852579BF004 E27F5.nsf/h_ Toc/D66E8C9 03441233485 2579BF0059C 6E0/?OpenD ocument&For m=h_PageUI" ]		2012 July Comment – Data from 2007through 2011 shows that Illinois has been prompt to respond to "other" violations. Over 98% of violations were responded to within 1 year. In 2010 there were no non-responses to violations. In all years from 2007-2011, 100% of violations were responded to by 2 years.
18	<u>Violation Response Rate:</u> Estimated Median Time (in days) Between Violation Awareness Date & Violation	LMRT		O6(2) (Updated annually in July by HQ)	Quickr: [ HYPERLINK "https://epaq px.rtp.epa.go		July 2012 comments – In the timeframe 2007- 2011, 90.5% of the time Illinois reported a State response rate to total violations within 60 days




#	Description	Type	Used For	Name Update Schedule	File	Target	Results Related EOY Comments
	Response, over the most recent 5 yrs				v/QuickPlace /region5state pwssprogram s/PageLibrary 852579BF004 E27F5.nsf/h_ Toc/D66E8C9 03441233485 2579BF0059C 6E0/?OpenD ocument&For m=h_PageUI" ]		of proxy violation awareness date. For tier 1 violations at CWS, IL reported a 100% response rate within 60 days of proxy violation awareness date. For tier 2 violations at CWS, IL reported a 100% violation response rate within 365 days of proxy violation awareness date.
19	<u>Violation RTC Rate:</u> Time (in days) between proxy vio awareness date and RTC date, over the most recent 5 yrs	LMRT		O6(2b) (Updated annually in July by HQ)	Quickr: [ HYPERLINK "https://epa.qpx.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579BF004E27F5.nsf/h_Toc/D66E8C9034412334852579BF0059C6E0/?OpenDocument&Form=h_PageUI"]		2012 comments – In the timeframe 2007- 2011, 9.7% of the Tier 1, 20.2% of the Tier 2 and 10.5% of the Tier 3 violations took greater than 1 year to return to compliance. During the timeframe 2007-2011, there were 19.7% of MCL violations not RTC'd within 1 year. For TT violations there were 6.8% not RTC'd within 1 year. Out of the total count of PWS violations, 11.2% were not RTC'd by 1 year.
20	# & % of Systems in Compliance with TT, MCL, and MRDL Requirements/Yr	LMRT		S5(1) (Updated annually in July by	Quickr: [ HYPERLINK "https://epa.qpx.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579BF004E27F5.nsf/h_Toc/D66E8C9034412334852579BF0059C6E0/?OpenDocument&Form=h_PageUI"]		2012 comment – For the timeframe 2007-2011 there were there were 97 Tier 1 and 515 Tier 2 TCR MCL

#	Description	Type	Used For	Name Update Schedule	File	Target	Results Related EOY Comments
				HQ)	px.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579BF004E27F5.nsf/h_Toc/D66E8C9034412334852579BF0059C6E0/?OpenDocument&Form=h_PageUI"]		violations; there were 35 IESWTR Tier 1 violations; there were 165 nitrates violations; there were 135 combined Ra MCL violations; there were 117 As MCL violations; . there were 28 LCR TT violations;
21	# & % of Systems in Compliance with M/R Requirements/Yr	LMRT		S5(2) (Updated annually in July by HQ)	Quickr: [ HYPERLINK "https://epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579BF004E27F5.nsf/h_Toc/D66E8C9034412334852579BF0059C6E0/?OpenDocument&Form=h_PageUI"]		2012 comment – During the timeframe 2007-2011, there were 950 TCR M/R violations There were 1138 nitrates; there were 35 combined Ra; There were 69 As M/R violations There were 338 LCR M/R violations There were 445 DBP M/R violations.
22	# & % of Systems in Compliance with 'Other'	LMRT		S5(4) (Updated	Quickr: [ HYPERLINK		2012 comments – During the time period from 2007-2011 the total

#	Description	Type	Used For	Name Update Schedule	File	Target	Results Related EOY Comments
	Requirements/Yr			annually in July by HQ)	"https://epa. gov/QuickPlace /region5state pwssprograms/ PageLibrary 852579BF004 E27F5.nsf/h_ Toc/D66E8C9 03441233485 2579BF0059C 6E0/?OpenD ocument&Form=h_PageUI" ]		number of PN violations was 191 a decrease from 263 in the 2006-2010 time period. The total number of CCR violations during this time frame was 369. There was 1 GWR violation during this timeframe. The largest numbers of PN and CCR violations were at small CWS.
23	New Rule Violation Completeness Reporting (GWR, LCRSTR, Stage 2/LT2	R5 High Priority	PWSS DM	(Updated in April and October by Region 5)	Quickr: [HYPERLINK "https://epa. gov/QuickPlace /region5state pwssprograms/ PageLibrary 852579E1007 44F09.nsf/h_ Toc/21B58BC 5FE4F337685 2579E100746 347/?OpenD ocument&Form=h_PageUI" ]		SWTR 2011 Comment - <b>October 2011:</b> 1 LT2SWTR violation has been reported by Illinois to SDWIS-FED. GWR 2011 Comment – One GWR violation has been reported to SDWIS/FED as of the October 2011 frozen database. LCR 2011 Comment - According to the October 2011 frozen database, 128 LCR violations have been reported by Illinois to SDWIS/FED. 2011 comment – <b>October 2011:</b> 130 GWR, Stage 2, LCRSTR, and LT2SWTR violations have been reported by Illinois to SDWIS/FED. <b>April 2012:</b> Illinois has reported 1 LT2SWTR violation, 3 GWR violations and 133 LCR violations to SDWIS/FED.
24	GW Sanitary Survey Completeness (not a national	R5 High	PWSS Sanitary	(Updated in April and October by	Quickr: [ HYPERLINK		GWR 3.5 2011 Comments – In the 2008 – 2010 timeframe, 85.1% of CWS


#	Description	Type	Used For	Name Update Schedule	File	Target	Results Related EOY Comments
	measure yet)	Priorit y	Surveys GWR	Region 5)	"https://epa px.rtp.epa.go v/QuickPlace /region5state pwssprogram s/PageLibrary 852579E1007 44F09.nsf/h_ Toc/39223EC 08B52359A8 52579E10080 2687/?Open Document&F orm=h_Page UI" ]		sanitary surveys were conducted within the 3 year timeframe that will be required beginning 12/31/12. 97.0% of the non-transient non-community and 98.3% of the transient non-community ground water system were conducted within the 5 year timeframe that will be required for NCWSs beginning 12/31/14. These numbers were generated from the <b>April 2011 SDWIS/FED freeze</b> . <b>April 2012:</b> for the 2009-2011 time-frame, Illinois completed 81.3% of CWS, 98.3% of NCWS and 98.1% of NTNCWS sanitary surveys have been completed within the appropriate time-frame.
25	Late TCR Rule Reporting	R5 High Priorit y	PWSS DM TCR	(Updated annually in October by Region 5)	Quickr: [ HYPERLINK "https://epa px.rtp.epa.go v/QuickPlace /region5state pwssprogram s/PageLibrary 852579E1007 44F09.nsf/h_ Toc/24124F3 1CD9593BB8 52579E10080 68ED/?Open Document&F orm=h_Page UI" ]		TCR 2010 comment - Based on an analysis of 2009 TCR October 2011 frozen data reporting done by Region 5, Illinois is reporting 54.9% of the violations on time, and 71.3% within 1 quarter after they are due. TCR 2011 comment– Based on an analysis of 2010 TCR reporting done by Region 5, April 2012 frozen data, Illinois is reporting 31.4% of the violations on time and 75.4% of the violations within 2 quarters after they are due. According to the April frozen data, Illinois is reporting 78.7% of its violations on-time and 95.2% within 1 quarter after it is due. This shows significant improvement.
26	Late Nitrate Rule Reporting	R5 High Priorit	PWSS DM NO <sub>2</sub> /NO <sub>3</sub>	(Updated annually in October by	Quickr: [ HYPERLINK "https://epa		Nitrate 4.3 2011 comment – Based on an analysis of 2009 nitrate, nitrate-nitrite, and nitrite reporting done by

#	Description	Type	Used For	Name Update Schedule	File	Target	Results Related EOY Comments
		y		Region 5)	px.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579E100744F09.nsf/h_Toc/0454180D3E8D2B05852579E10080EF6C/?OpenDocument&Form=h_PageUI"]		Region 5, Illinois reported 3.0% of the violations on time, and 8.9% within one quarter after they are due and 86.6% within 2 quarters after they are due. For 2010, Illinois reported 23.7% on time, and 57.0% within one quarter after they were due and 93.9% within 2 quarters after they are due. – Based on April 2012 frozen data nitrate, nitrate-nitrite and nitrite Reporting is 40.6% on-time and 100% within the first quarter. This shows an improvement over the previous year.
27	Arsenic MCL Non-compliance	NEW R5 High Priority	PWSS As	(Updated quarterly by HQ—NPM Measures Tables filtered for active, non-RTC'd arsenic MCL violations)	Quickr: [ HYPERLINK "https://epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579E100744F09.nsf/h_Toc/EBF08B0371DA07F3852579E100828342/?OpenDocument&Form=h_PageUI" ]		FY10: FY11: As of January 2012, Illinois had 0.5% CWS and 0.2% NTNCWS not RTC'd of active systems. FY12:



## Lead and Copper Rule 101 Requirements before an Action Level Exceedance

First in Three-Part Webinar Series



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## How the Presentation is Organized

- Introduction
- 1991 Lead and Copper Rule and Revisions
- Health Effects and Sources
- Overview of the Lead and Copper Rule
- Lead and Copper Tap Monitoring Requirement
- 90<sup>th</sup> Percentile Calculation
- Requirements to Inform the Public
- Water Quality Parameter Monitoring
- Requirements related to Long-Term Treatment Changes and New Source Additions

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## Introduction

### Terminology for Primacy Agency

- State means Primacy Agency
- 40 CFR §141.2 definition for State
- Possible Primacy Agencies
  - State
  - Tribal government
  - EPA region

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## Introduction

### Acronyms

AL:	Action Level
ALE:	Action Level Exceedance
CCT:	Corrosion Control Treatment
CWS:	Community Water System
LCR:	Lead and Copper Rule
LCR MR:	Lead and Copper Minor Revisions
LCR STR:	Lead and Copper Short-Term Revisions and Clarifications
LSLR:	Lead Service Line Replacement
MCL:	Maximum Contaminant Level
MCLG:	Maximum Contaminant Level Goal
M/R:	Monitoring and Reporting (Violation)
NTNCWS:	Non-transient Non-community Water System
OWQP:	Optimal Water Quality Parameters
PWS:	Public Water System
SOWT:	Source Water Treatment
WQP:	Water Quality Parameter

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## Regulatory Authority for Controlling Lead Levels in Drinking Water

- **The Lead Ban (1986):** A requirement that only lead-free materials be used in new plumbing and in plumbing repairs.
- **The Lead Contamination Control Act (LCCA) (1988):** The LCCA further amended the SDWA. The LCCA is aimed at the identification and reduction of lead in drinking water at schools and child care facilities. *However,* implementation and enforcement of the LCCA has been at each state's discretion. School monitoring and compliance has varied widely.
  - There is **NO** federal law requiring schools or child care centers to test drinking water for lead
- **The Lead and Copper Rule (1991):** A regulation by EPA to minimize the corrosivity and amount of lead and coppers in water supplied by public water systems.

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## Lead and Copper Rule (LCR)

### Background

- National Primary Drinking Water Regulation (NPDWR) promulgated **June 7, 1991**-Minor Revisions **Jan 12, 2000** and Short Term Revisions **October 7, 2007**
  - Addresses corrosion of lead and copper in drinking water
    - primarily from service lines and household plumbing
  - Maximum Contaminant Level Goals (MCLG)
    - Lead – 0 µg/L
    - Copper – 1.3 mg/L
  - Requires a treatment technique (optimized corrosion control) rather than a Maximum Contaminant Level (MCL)
  - Tap sampling results (the 90<sup>th</sup> percentile) are compared to an action level
    - Lead - 15 µg/L
    - Copper - 1.3 mg/L

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### Lead and Copper Rule (LCR)

**Background Continued**

- Corrosion control is chemical treatment that is designed to reduce the corrosivity of water. The major optimal corrosion control treatment (OCC) techniques are:
  - ✓ pH and/or Alkalinity Adjustment.
  - ✓ Inhibitor Addition (phosphate or silicate based inhibitors)
- For small/med systems action level for lead is a screen for optimal corrosion control as part of the treatment technique. It is based on treatment feasibility; NOT on a health threshold
- Large systems are required to optimize corrosion control regardless of their 90th percentile lead concentration, unless the difference between the 90th percentile and the highest source water lead concentration is <0.005 mg/L (PQL).

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### Lead and Copper Minor Revisions (2000)

**Scope of Revisions**

- Reduce burden
  - Frequency of monitoring
  - Flexibility in public education requirements
- Improve implementation
  - Compliance with OWQP
  - Sample invalidation
- Clarifications of 1991 such as sampling site requirements and requirements for maintaining optimal corrosion control
- Addressed two judicial remands
  - Transient water system exclusion
  - Lead service line replacement requirements

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### Lead and Copper Short-Term Revisions (2007)

**Scope of Revisions**

- Addresses implementation issues with existing rule:
  - ✓ Monitoring revisions (sample number, timing clarifications).
  - ✓ Additional requirements for providing public information.
  - ✓ Advanced notification of treatment changes and source additions.
  - ✓ Reevaluation of "tested-out" lead service lines.
- Targeted changes based on input from National LCR Review.
- Key elements of treatment technique requirements are unchanged.
- Long-term revision process is currently under way.

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### Health Effects of Lead in Children

- Young children and infants tend to absorb more lead than the average adult
- Impaired mental development
- IQ deficits
- Shorter attention spans
- Low birth weight
- EPA set the MCLG at zero.



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### Health Effects of Copper

- Stomach and intestinal distress
- Complication of Wilson's Disease
- Chronic Exposure can cause liver disease in genetically predisposed individuals
- EPA set the MCLG at 1.3 mg/L

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## Lead and Copper Rule



### Overview

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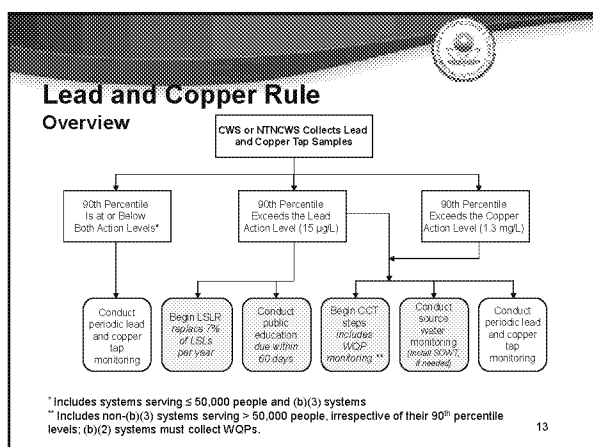
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**Lead and Copper Rule Overview**

- Three system size categories.
  - Large:** > 50,000 people
  - Medium:** 3,301 to 50,000 people
  - Small:** 3,300 or fewer people
- System size determines the sample number and applicability/timing of some requirements.

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**Review of Lead and Copper Tap Monitoring Requirements**

UNITED STATES  
ENVIRONMENTAL PROTECTION AGENCY

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## Review of Monitoring Requirements

### Site Selection - CWS

Three sampling site tiers: Tier 1, Tier 2 and Tier 3:

- ✧ Tier 1 sample sites are considered high risk sites.
- ✧ Tier 1 sampling pool consists of single\* family structures that:
  - ✓ Contain copper pipes with lead solder installed after 1982 (but before State's lead ban) or;
  - ✓ Contain lead pipes; and/or,
  - ✓ Are served by a lead service line.



(collect 50% of samples from LSLs)

\* May include multiple-family residences in sampling pool when they comprise at least 20 percent of structures served.

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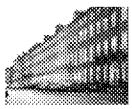
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## Review of Monitoring Requirements

### Site Selection - CWS

- ✧ Tier 2 sampling pool consists of buildings including multiple family residences that:
  - ✓ Contain copper pipes with lead solder installed after 1982 (but before State's lead ban); or
  - ✓ Contain lead pipes ;and/or,
  - ✓ Are served by a lead service line.



- ✧ Tier 3 sampling pool consists of single family structures that:
  - ✓ Contain copper pipes with lead solder installed before 1983.

Use representative sites throughout distribution system if insufficient number of tiered sampling sites are available.

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## Review of Monitoring Requirements

### Site Selection - NTNCWS

Two sampling site tiers: Tier 1 and Tier 2.

- ✧ Tier 1 sampling pool consists of sample sites that:
  - ✓ Contain copper pipes with lead solder installed after 1982 (but before State's lead ban); or,
  - ✓ Contain lead pipes; and/or,
  - ✓ Are served by lead service line.
- ✧ Tier 2 sampling pool consists of sample sites that:
  - ✓ Contain copper pipes with lead solder installed before 1983.



Use representative sites throughout distribution system if insufficient number of tiered sampling sites are available.

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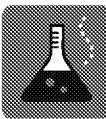
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## Review of Monitoring Requirements

### Sample Collection Method



- ✓ First-draw
- ✓ 6-hour standing time
- ✓ One-liter volume



- ✓ System or residents can collect
- ✓ Samples are taken from kitchen/bathroom taps

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## Review of Monitoring Requirements

### Sample Collection Method Continued

- Water Softeners:
  - Don't collect samples from taps at homes with water softeners or other point-of-use or point-of-entry devices for inorganic removal.
  - If the only available sites have these devices, collect samples from the sites with the highest tier rating (Tier 1, followed by Tier 2 and then Tier 3).

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## Lead and Copper Tap Monitoring

### Management of Aerators during Sample Collection

- EPA recommends homeowners regularly clean their aerators to remove the particulate matter.
- EPA also states that public water systems should NOT recommend that customers remove or clean aerators prior to or during sample collection for lead and copper.\*
- If customers are only encouraged to remove and clean the aerators prior to sampling for lead, then the water system could fail to identify the typical contribution of lead from that tap.
- If a homeowner's result (*with aerator*) is above the action level, the water system may want to take a second sample (*without aerator or a clean aerator*) to determine whether particulate matter is the source of lead.
- In the above example the results of both samples would be included in the set of samples used to determine the 90<sup>th</sup> percentile (*i.e., the first sample could not be invalidated based on the presence of lead-bearing matter in the aerator*).

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### Lead and Copper Tap Monitoring

#### Clarifications of Requirements for Collecting Samples and Calculating Compliance (2004 memo)

- EPA addressed 7 aspects of the requirements for collecting samples and calculating compliance:
  - All sample results from a system's sampling pool during the monitoring period must be included in the 90<sup>th</sup> percentile calculation *(even if this includes more samples than the required minimum number needed for compliance)*.
  - Customer-requested samples should not be used to calculate the 90<sup>th</sup> percentile, except in cases where the system is able to determine that the site selection criteria for compliance sampling are satisfied.
  - Only samples collected during the compliance monitoring period may be included in the 90<sup>th</sup> percentile calculation.\*

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### Lead and Copper Tap Monitoring

#### Clarifications of Requirements for Collecting Samples and Calculating Compliance Continued (2004 memo)

- States must calculate the 90<sup>th</sup> percentile even if the minimum number of samples are not collected.
- A proper sample is defined as a first draw one liter sample that is taken from an interior tap used for consumption (i.e. kitchen or bathroom sink) after the water has been standing in plumbing for at least six hours.
- To avoid sample collection problems, the system may wish to do the sampling itself or review the sample collection information before sending it to the lab.
- A State can invalidate a sample for one of the following reasons:
  - Improper sample analysis
  - Site selection criteria not met
  - Sample container was damaged in transit
  - Sample subjected to tampering

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### Lead and Copper Tap Monitoring

#### Sample Collection Continued

- A sample cannot be invalidated:
  - ✓ Alleged homeowner error in sample collection
  - ✓ Excessive stagnation periods



After a sample is analyzed, a system cannot challenge the results.

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### Lead and Copper Tap Monitoring Sample Collection Continued

- To request sample invalidation, system must provide:
  - ✓ All sample results to the State
  - ✓ Documentation for samples to be invalidated
- State's decision to invalidate sample:
  - ✓ Must be in writing
  - ✓ Cannot be on the grounds that a follow-up sample result is higher or lower than that of the original sample
- Invalidated samples are not counted for compliance.


*Note: If a State invalidates a sample and the system must collect a replacement sample to have a sufficient number of samples to calculate compliance, the system must collect a replacement sample within 20 days (even if sample collection is after the end of the monitoring period) and the results must be included in the 90<sup>th</sup> percentile.*

### Lead and Copper Tap Monitoring Sample Collection Continued

- Replacement samples must be taken:
  - ✓ If needed to meet minimum sampling requirements
  - ✓ As soon as possible but no later than 20 days after invalidation or by end of monitoring period (whichever is later)
  - ✓ From the same locations as the invalidated samples, or if that is not possible, at locations other than those already used for sampling during the monitoring period
- Replacement samples cannot be used to satisfy requirements for a subsequent monitoring period.

### Monitoring Requirements Minimum Number of Tap Samples

System Population	Number of Sampling Sites (on Routine Monitoring)	Number of Sampling Sites (on Reduced Monitoring)
>100,000	100	50
10,001 to 100,000	60	30
3,301 to 10,000	40	20
501 to 3,300	20	10
101 to 500	10	5
<100	5	5



### Monitoring Requirements

#### Minimum Number of Samples Required

Systems with fewer than 5 taps for human consumption can do one of two things:

1. Collect multiple samples from same location on different days to meet 5 sample minimum.

Or

2. States may allow 1 sample per tap for human consumption if < 5 such taps.

*Note: If < 5 samples are taken, highest result is 90<sup>th</sup> percentile level.*

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### Monitoring Requirements

#### Monitoring Period

**Standard monitoring:**

- Conducted at 6-month intervals of January-June or July-December
- Applies unless the system qualifies for reduced monitoring
- Not required during some corrosion control treatment steps

System Population	Minimum Number of Sampling Sites
>100,000	100
10,001 to 100,00	60
3,301 to 10,000	40
501 to 3,300	20
101 to 500	10
≤100	5

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### Monitoring Requirements

#### Monitoring Period

**Reduced Monitoring:**

- Conducted at a reduced frequency and a reduced number of sample sites
- Conducted during a 4-month period of June-September, unless State approves an alternate period

System Population	Minimum Number of Sampling Sites
>100,000	50
10,001 to 100,00	30
3,301 to 10,000	20
501 to 3,300	10
101 to 500	5
≤100*	5

\*Same as standard monitoring

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## Monitoring Requirements

### Monitoring Period

#### Reduced Monitoring:

- Systems can go from standard monitoring to annual monitoring if:
  - System serving  $\leq 50,000$  people the 90<sup>th</sup> percentile meets or is **both** lead and copper action levels (ALs) for 2 consecutive 6-month monitoring periods; or
  - Any system that meets optimal WQPs (OWQPs) and with a 90<sup>th</sup> percentile that is at or below the lead AL for 2 consecutive 6-month monitoring periods.
- Annual monitoring begins in calendar year (CY) after criteria are met

If 2 <sup>nd</sup> 6-month is:	Annual Monitoring Period
January – June	June 1 – Sept 30 of next CY
July – December	

## Monitoring Requirements

### Monitoring period

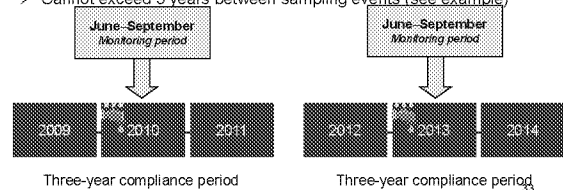
- Systems can go from annual monitoring to triennial reduced monitoring if:
  - System serving  $\leq 50,000$  people the 90<sup>th</sup> percentile meets or is below **both** lead and copper action levels (ALs) for 3 consecutive years of annual monitoring\*, or
  - Any system that meets OWQP specifications and the 90<sup>th</sup> percentile meets or is below the **lead** AL for 3 consecutive years of annual monitoring; or
  - Any system with 90<sup>th</sup> percentile levels  $\leq 0.005$  mg/L for lead and  $\leq 0.65$  mg/L for copper for 2 consecutive 6-month monitoring periods

\*Two consecutive 6-months counts as 1<sup>st</sup> year.

## Monitoring Requirements

### Three-Year Compliance Period

- Triennial monitoring must occur once during every 3-year compliance period
- Monitoring period is June – Sept. of same calendar year
- Cannot exceed 3 years between sampling events (see example)





## Monitoring Requirements

### Monitoring Waivers

- 9-Year Monitoring Criteria (Waiver)
  - System serves  $\leq 3,300$  people
  - System's distribution system, service lines, and plumbing materials meet certain criteria that indicate negligible risk from lead and/or copper exposure (i.e., are lead- or copper-free)
  - 90th percentile levels are  $\leq 0.005\text{mg/L}$  for lead and  $\leq 0.65\text{mg/L}$  for copper

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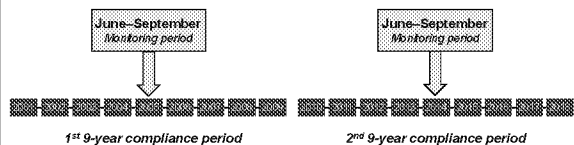
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## Review of Monitoring Requirements Continued

### Nine-Year Compliance Period

- › Nine-year monitoring must occur once every nine-year compliance period
- › Monitoring period is June through September of same calendar year
- › Cannot exceed nine years between sampling events (see example)




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## Review of Monitoring Requirements

### How a System Returns to Standard Monitoring

- Return to Standard Monitoring if System serves:
  - $\leq 50,000$  people and exceeds either AL during any monitoring period;
  - Any system which does not meet its OWQP specifications; set by the State for more than 9-days in a six-month period (i.e., excursion); or
  - Any system which meets its OWQP specifications but exceeds the lead AL
- Begins in January 1 of CY following monitoring period in which AL exceedance or excursion occurred

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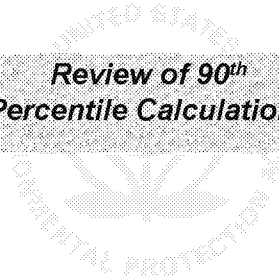
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## Review of 90<sup>th</sup> Percentile Calculations

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## 90<sup>th</sup> Percentile Calculations

**More than 5 Samples**

- 🔧 **Step 1:** Place lead or copper results in ascending order.
- 🔧 **Step 2:** Assign each sample a number, 1 for lowest value.
- 🔧 **Step 3:** Multiply the total number of samples by 0.9.  
Example: 20 samples x 0.9 = 18<sup>th</sup> sample.\*
- 🔧 **Step 4:** Compare 90<sup>th</sup> percentile level to AL (in above example, 18<sup>th</sup> sample).



\* When more than minimum number of samples are collected, may need rounding or interpolation to determine 90<sup>th</sup> percentile sample. 38

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## 90<sup>th</sup> Percentile Calculations

**More than 5 Samples: Example Question**

Assume 10 samples are collected with lead results as follows:

Site A:	0.005 mg/L
Site B:	0.015 mg/L
Site C:	0.005 mg/L
Site D:	0.014 mg/L
Site E:	0.014 mg/L
Site F:	0.005 mg/L
Site G:	0.040 mg/L
Site H:	0.014 mg/L
Site I:	0.014 mg/L
Site J:	0.005 mg/L

*What is the 90th Percentile Value?*

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### 90<sup>th</sup> Percentile Calculations

**More than 5 Samples: Example Answer**

**Step 1: Order results from lowest to highest:**

1. Site A: 0.005	6. Site E: 0.014
2. Site C: 0.005	7. Site H: 0.014
3. Site F: 0.005	8. Site I: 0.014
4. Site J: 0.005	9. Site B: 0.015 ←
5. Site D: 0.014	10. Site G: 0.040

**Step 2: Multiply number of samples by 0.9 to determine which represents 90th percentile level**

**10 x 0.9 = 9th sample (or 0.015 mg/L)**

**Step 3: Compare to lead action level → No Exceedance<sup>40</sup>**

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### 90<sup>th</sup> Percentile Calculations

**Use of Rounding or Interpolation**

- Use rounding or interpolation if:
  - You have collected more than 5 samples, and
  - The number of samples x 0.9 is not a whole number
- **EXAMPLE:**
  - System has 12 LCR compliance samples
  - $12 \times 0.9 = 10.8$ , which is not a whole number
  - 10<sup>th</sup> highest sample lead result = 0.014 mg/L
  - 11<sup>th</sup> highest sample lead result = 0.020 mg/L
- **QUESTION:**
  - What is the 90<sup>th</sup> percentile?

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### 90<sup>th</sup> Percentile Calculations

**Use of Rounding**

**Step 1: Round to the nearest whole number**

- E.g., 10.8<sup>th</sup> sample ranking would round to the 11<sup>th</sup> sample

**Step 2: Use the sample result that corresponds to the rounded sample ranking from Step 1 as the 90<sup>th</sup> percentile**

- E.g., 11<sup>th</sup> sample result = 0.020 mg/L

**Step 3: Compare the sample result from Step 3 to the action level of 0.015 mg/L**

- E.g., 0.020 mg/L is greater than 0.015 mg/L → Action Level Exceedance

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**90th Percentile Calculations****Use of Interpolation**

**Step 1:** Subtract the two sample results between which the 90<sup>th</sup> percentile falls

- E.g., 90<sup>th</sup> percentile = 10.8. Subtract 11<sup>th</sup> and 10<sup>th</sup> results.  
 $0.020 \text{ mg/L (11<sup>th</sup> sample)} - 0.014 \text{ mg/L (10<sup>th</sup> sample)} = 0.006 \text{ mg/L}$

**Step 2:** Subtract the 90<sup>th</sup> percentile and lower of the two numbers between which the 90<sup>th</sup> percentile falls (falls between 11 and 10)

- E.g.,  $10.8 \text{ (90<sup>th</sup> percentile)} - 10 = 0.8$

**Step 3:** Multiply the differences obtained in Steps 1 and 2

- E.g.,  $0.006 \text{ mg/L (from Step 1)} \times 0.8 \text{ (from Step 2)} = 0.005 \text{ mg/L (rounded)}$

**Step 4:** Add Step 3 result to the lower of the two sample results

- E.g.,  $0.005 \text{ mg/L (from Step 3)} + 0.014 \text{ mg/L (10<sup>th</sup> sample result)} = 0.019 \text{ mg/L} \rightarrow \text{Action Level Exceedance}$

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**90th Percentile Calculations****5 Samples**

 **Step 1:** Place results in ascending order

 **Step 2:** Average 4<sup>th</sup> and 5<sup>th</sup> highest sample results

 **Step 3:** Compare 90<sup>th</sup> percentile level to action level



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**90th Percentile Calculations****5 Samples: Example Question**

Assume 5 samples are collected with lead results as follows:

Site A: 0.009 mg/L

Site B: 0.011 mg/L

Site C: 0.020 mg/L

Site D: 0.009 mg/L

Site E: 0.010 mg/L

*What is the 90th Percentile Value?*

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### 90<sup>th</sup> Percentile Calculations

#### 5 Samples: Example Answer

Step 1: Order results from lowest to highest:

1. Site A: 0.009 mg/L
2. Site D: 0.009 mg/L
3. Site E: 0.010 mg/L ←
4. Site B: 0.011 mg/L
5. Site C: 0.020 mg/L

Step 2: Average 4th & 5th samples highest samples to get 90th percentile value = 0.016 mg/L

$$\frac{0.011 \text{ mg/L} + 0.020 \text{ mg/L}}{2} = 0.0155 \text{ mg/L}$$

Step 3: Compare average to lead action level → Exceedance 46

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### 90<sup>th</sup> Percentile Calculations

#### Fewer than 5 Samples

**NEW**

- Procedure has changed under STR.
- Some systems may collect < five samples.
- Sample with **highest result** is 90<sup>th</sup> percentile level.

Assume 3 lead samples: 0.020 mg/L, 0.008 mg/L, and 0.005 mg/L

90<sup>th</sup> percentile = 0.020 mg/L

- No M/R violation.

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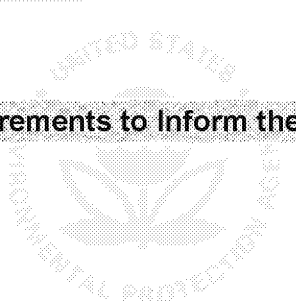
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### Requirements to Inform the Public

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## Lead and Copper Rule

Requirements to Inform the Public before an ALE

- Consumer Notification of Lead Tap Water Results.
- Consumer Confidence Report Lead Informational Statement.

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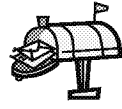
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## Requirements to Inform the Public

### Lead Consumer Notice

**Systems Affected**

- All CWSs and NTNCWSs

**Rule Requirements**

- Provide notice of lead tap water monitoring results
- Provide irrespective of whether sample exceeds lead AL
- Provide to all served by sampling site -- not just ones with water bills
- Provide as soon as practical but within 30 days after receives results
- Provide by mail or other State-approved methods

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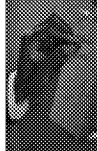
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## Requirements to Inform the Public

### Lead Consumer Notice

**Notice must include:**

- ✓ Results of lead tap water monitoring
- ✓ Explanation of lead health effects
- ✓ Steps consumers can take to reduce exposure
- ✓ Facility contact information
- ✓ MCLG and AL for lead and their definitions\*

*\* Must use CCR Rule language in §141.13(c)*

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


## Requirements to Inform the Public

### Lead Consumer Notice

Within 3 months after the monitoring period ends, the system sends the State:

- Sample of lead consumer notice, and
- Certification that notification meets delivery requirements.
- Sample certification available in revised M/R and State implementation guidances.\*



<http://www.epa.gov/safewater/monitoring/leadconsumer.html>

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## Requirements to Inform the Public

### Consumer Confidence Report (CCR) Requirement

#### Systems Affected

- All CWSs

#### Rule Revision

- All CCRs must include:
  - ✓ Sources of lead in drinking water.
  - ✓ Health effects from lead exposure.
  - ✓ Ways to reduce lead in drinking water.
  - ✓ Recommended flushing times.
  - ✓ Places to go for more information including lead testing.
- Required regardless of lead sample levels.

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## Requirements to Inform the Public

### Consumer Confidence Report Requirement (CCR)

#### Must include following mandatory language

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. [Name of Utility] is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

• Or write own statement in consultation with State.

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## Water Quality Parameter Monitoring

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## Water Quality Parameter Monitoring

- Required for all large systems (systems serving more than 50,000 persons)
- Required for small/medium system which exceed the lead or copper action level
- Sample site locations
  - Representative locations (e.g., coliforms and disinfectant residual sites)
  - Entry point to the distribution system

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## Water Quality Parameter Monitoring

Purpose of WQP monitoring:

- To assist in determining water corrosivity
- To identify appropriate corrosion control treatment
- To determine whether corrosion control treatment is being properly maintained

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## WQP Monitoring - Parameters

Typical Water Quality Parameters	
pH <sup>1</sup>	Orthophosphate <sup>2</sup>
Alkalinity	Silica <sup>3</sup>
Calcium	Temperature <sup>1</sup>
Conductivity	
<sup>1</sup> Measured on-site.	
<sup>2</sup> Applies when a phosphate-containing inhibitor is used.	
<sup>3</sup> Applies when a silicate-containing inhibitor is used.	

## WQP Monitoring

### Number of Samples

- Number of samples – two sets of samples per site and samples should be taken from taps that have been fully flushed

Standard Number of WQP "Tap" Sites and Samples		
System Size (No. of People Served)	No. of Sites (Standard)	No. of Samples (2 per site)
> 100,000	25	50
10,001 to 100,000	10	20
3,301 to 10,000	3	6
501 to 3,300	2	4
< 500	1	2

## WQP Monitoring

- Large Systems: During the 2 consecutive 6-month monitoring periods immediately following corrosion control treatment (CCT) installation
- Medium and Small Systems: Only during the monitoring period(s) in which AL exceedance occurs following CCT installation
- Sample Sites
  - Entry Points: Changes to 1 sample every 2 weeks
    - Exception: Ground water systems may receive State approval to limit monitoring to entry point samples that are representative of water quality and treatment conditions throughout the system
  - Taps: 2 samples from each tap during monitoring period

## WQP Monitoring

- The State will review the lead and copper tap monitoring and water quality parameter data that the system has collected prior to and after the installation of corrosion control treatment to set optimal water quality parameter (OWQP) minimums or ranges.
- OWQPs specify how CCT must be maintained

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## WQP Monitoring

### After State Sets OWQPs

- Collect WQP tap samples every 6 months (2 samples at standard number of taps)
- Entry point every 2 weeks (at each entry point or representative sites)
- Required for:
  - Systems serving > 50,000
  - Medium and Small Systems during monitoring period(s) in which AL exceedance occurs, or if required by State

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## WQP Monitoring

### After State Sets OWQPs

#### The WQP compliance period begin dates:

- ⌚ After State sets OWQPs begins:
  - ✓ January 1 or July 1 for systems on standard monitoring.
  - ✓ June 1 for small/medium on reduced monitoring.\*
- ⌚ Annual monitoring begins during CY after end of 3<sup>rd</sup> consecutive 6-month period of meeting OWQPs.
- ⌚ Triennial monitoring begins no later than 3 years after 3<sup>rd</sup> consecutive year of meeting OWQPs.

\* 6-month OWQP compliance period will be June 1 – November 30.

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## WQP Monitoring

- OWQP compliance is based on 6-month periods
- Cannot be outside OWQP ranges or below OWQP minimum for more than 9 days:
  - at a specific sampling point or combination of sampling points, or
  - for a specific WQP or combination of WQPs during a 6-month period
- The 9 days do not have to be consecutive days

Refer to, *How to Determine Compliance with Optimal Water Quality Parameters as Revised by the Lead and Copper Rule Minor Revisions*.  
[http://water.epa.gov/lawsregs/rulesregs/sdwa/lcr/upload/2001\\_6\\_7\\_lcrm\\_guidance\\_lcrm\\_optimal\\_water\\_quality\\_compliance.pdf](http://water.epa.gov/lawsregs/rulesregs/sdwa/lcr/upload/2001_6_7_lcrm_guidance_lcrm_optimal_water_quality_compliance.pdf), February 2001

## WQP Monitoring

### Reduced Monitoring

- Every 6 months w/ Reduced Tap Samples
  - OWQP maintained for 2 consecutive 6-month periods
    - Continue with entry point sampling (every 2 weeks)
    - Reduce number of tap samples – applies to systems serving > 10,000

Number of WQP Tap Sample Sites (2 samples from each site)		
System Size	Standard	Reduced
> 100K	25	10
10,001 – 100K	10	7
3,301 – 10K	3	3
501 – 3,300	2	2
101 – 500	1	1

## WQP Monitoring

### Reduced Monitoring

- Annually
  - OWQP maintained for 3 consecutive years
    - Continue with entry point sampling (every 2 weeks)
    - Reduce tap sample frequency to annually
- Triennial
  - Annual OWQP maintained for 3 consecutive years;  
or
  - Any PWS with 90th percentile levels  $\leq 0.005\text{mg/L}$  for Pb and  $\leq 0.65\text{mg/L}$  for Cu and maintains OWQP for 2 consecutive 6-month monitoring periods
    - Continue with entry point monitoring (every 2 weeks)
    - Reduce tap sample frequency to once every three years

Annual samples should be spread evenly throughout the year to capture seasonal variability.

## WQP Monitoring

### Return to Standard Monitoring from Reduced Monitoring

- If system fails to meet OWQP specification for more than 9 days in a 6-month compliance period:
  - Return to 6-month monitoring frequency
  - Systems serving > 10,000 must collect standard number of WQP taps
- Can re-qualify for reduced monitoring

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## Notification of Treatment Changes and Source Additions

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## Long-Term Treatment Changes and New Source Additions

### Systems Affected

- Systems on reduced lead and copper tap monitoring

### Rule Requirement

- Requires prior notification and approval of treatment change or source addition
- Limits notification of treatment changes to "long-term changes"
- Notification due as specified by State, or early as possible prior to change or addition

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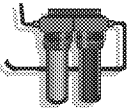
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### Long-Term Treatment Changes and New Source Additions

Examples of long-term treatment changes:

- ✓ Switching secondary disinfectants
- ✓ Switching coagulants
- ✓ Switching corrosion inhibitor products
- ✓ Changing dosage of existing chemicals
- ✓ Installation of membrane filters, ozonation, enhanced coagulation/softening



Does NOT include chemical dose fluctuations associated with daily raw water quality changes

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### Long-Term Treatment Changes and New Source Additions

Examples of source water additions include:

- ✓ Switching source types
- ✓ Adding treated surface water to ground water only system
- ✓ Adding new well from different aquifer



Seasonal or interannual source changes DO NOT require notification if:

- ✓ Covered by previous OCCT studies and sampling, and
- ✓ Covered within OCCT designation framework

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### Long-Term Treatment Changes and New Source Additions

Simultaneous Compliance Guidance Manual -- LT2 and Stage 2 DBP Rules

- Format differs from 1999 manual
- Treatment change chapters
- Improving or optimizing existing treatment
- Addition of new carbon or microbial removal technology
- Alternate disinfection strategies



Available at:  
<http://www.epa.gov/oww/watersinfoc/stage2/compliance.html>

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## Lead and Copper Rule

### Resources

- EPA's lead and copper compliance help web site  
<http://water.epa.gov/lawsregs/rulesregs/sdwa/lcr/compliancehelp.cfm>
- Lead and Copper Rule: A Revised Quick Reference Guide (PDF) (2 pp, 125K) EPA816-F-08-018 June 2008
- Lead and Copper Rule: A Quick Reference Guide for Schools and Child Care Facilities that Are Regulated Under the Safe Drinking Water Act (PDF) (5 pp, 546K)
- Final Revised Guidance Manual for Selecting Lead and Copper Control Strategies (PDF) (54 pp, 664K) EPA 816-R-03-001, March 2003
- Simultaneous Compliance Guidance Manual for Stage 2 Rules (PDF) (462 pp, 3MB) EPA 815-R-07-017 May 2007
- Lead and Copper Rule Guidance Manual, Volume II: Corrosion Control Treatment EPA 811-B-92-002, September 1992
- Lead and Copper Rule (LCR) 2007 Short-Term Regulatory Revisions and Clarifications State Implementation Guidance (PDF) (75 pp, 586K)
- Implementing the Lead Public Education Provisions of the Lead and Copper Rule: A Guide for Community Water Systems (PDF) (93 pp, 1MB)

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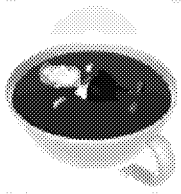
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## Questions?

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# Lead and Copper Rule 101: Requirements Before an Action Level Exceedance

5/21/2013

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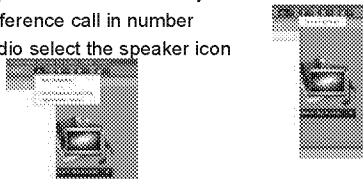
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- Select the microphone icon to connect your audio
- There is NO conference call in number
- To adjust the audio select the speaker icon



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U.S. Environmental Protection Agency

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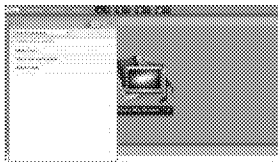
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## Just a reminder....



- Please send your questions & comments by selecting by typing your question in the Q & A box



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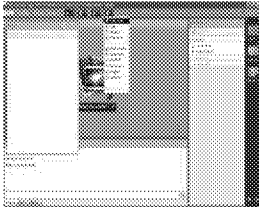
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## Seeking Assistance

- Select the icon where the person is raising their hand.
- You can select from a variety of responses:
  - Request speaker to speak louder
  - Request speaker to speed up
  - Raise your hand



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## Disclaimer

The examples included in this presentation are intended for discussion purposes only. Throughout this presentation, the terms "state" or "states" are used to refer to all types of primacy agencies including U.S. territories, Indian tribes, and EPA Regions. The statutory provisions and EPA regulations described in this document contain legally binding requirements. This presentation is not a regulation itself, nor does it change or substitute for those provisions and regulations. Thus, it does not impose legally binding requirements on EPA, states, or public water systems. This guidance does not confer legal rights or impose legal obligations upon any member of the public. While EPA has made every effort to ensure the accuracy of the discussion in this presentation, the obligations of the regulated community are determined by statutes, regulations, or other legally binding requirements. In the event of a conflict between the discussion in this presentation and any statute or regulation, this presentation would not be controlling.

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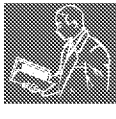
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## Web Cast Presenters



Dr. St. Denis is in the Protection Branch in EPA's Office of Ground Water and Drinking Water. She leads the office's efforts on reducing lead in drinking water in schools and child care facilities. She is responsible for implementation issues related to the Lead and Copper Rule, Radionuclides Rule, and the Arsenic Rule. Previously she worked at the Philadelphia Water Department as an Analytical Chemist on projects related to disinfection byproducts, contaminants of emerging concern, fecal sterols, and herbicides. Dr. St. Denis holds a Ph.D. in organic chemistry from Syracuse University.



Ed Moriarty is an Environmental Protection Specialist in EPA's Office of Ground Water and Drinking Water (OGWDW) and Team Lead for the Effective Rule Implementation Team. Ed's experience includes implementation and training of Drinking Water Regulations since joining OGWDW twelve years ago. Prior to joining the EPA, Ed accumulated over seventeen years of professional, technical, and policy experience as an environmental chemist, manager, inspector, and senior technical consultant in support of EPA's RCRA, Superfund, Enforcement and Compliance, and Drinking Water programs.

5/21/2013

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American Water  
1115 South Illinois Street  
Belleville, IL 62220-3102  
Phone: (618) 235-3600  
Fax: (618) 235-6349

July 16, 2013

Lori L Stenzel  
Illinois American Water  
800 North Front St  
East Saint Louis, IL 62201

RE: Workorder: 221025 16533 Orange T PBCU 1  
Workorder: 373 Derby Meadow

Dear Lori Stenzel:

Enclosed are the analytical results for sample(s) received by the laboratory on Wednesday, July 10, 2013. All analyses are performed using approved drinking water methodologies and meet method requirements unless otherwise noted. Each state may not offer certification for all analyses reported.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Diane Mueller (Digitally Signed)

Report ID: 221025

Page 1 of 6

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American Water  
1115 South Illinois Street  
Belleville, IL 62220-3102  
Phone: (618) 235-3600  
Fax: (618) 235-6349

## SAMPLE SUMMARY

Client: IL Illinois American Water  
Profile: 373 Alpine Heights  
Workorder: 221025 16533 Orange T PBCU 1

Lab ID		Sample ID		Matrix	
PWSID	Facility ID	Site ID	Site Sample Type	Certified Lab ID	
22102501	16533 Orange		Drinking Water		
IL1970030	DISTRIBUTION	LP3R001	DS	100203	

Report ID: 221025

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1115 South Illinois Street  
Belleville, IL 62220-3102  
Phone: (618) 235-3600  
Fax: (618) 235-6349

## PROJECT SUMMARY

Client: IL Illinois American Water  
Profile: 373 Alpine Heights  
Workorder: 221025 16533 Orange T PBCU 1

### Sample Comments

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Lab ID:	Sample ID:	Sample Type:
22102501	16533 Orange	COMP
INSUFFICIENT VOLUME FOR THE PBCU RULE.		
22102501-A	16533 Orange	Insufficient Volume or Empty

### Sample Analysis Comments

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Lab ID 22102501 Client ID 16533 Orange

#### Analyte/Copper

R = Data is not acceptable for compliance purposes.

#### Analyte/Lead

R = Data is not acceptable for compliance purposes.

Report ID: 221025

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American Water  
1115 South Illinois Street  
Belleville, IL 62220-3102  
Phone: (618) 235-3600  
Fax: (618) 235-6349

## ANALYTICAL RESULTS

Client: IL Illinois American Water  
Profile: 373 Alpine Heights  
Workorder: 221025 16533 Orange T PBCU 1

### FOR COMPLIANCE

Lab ID: **22102501** Date Received: 7/10/2013 09:30 Matrix: Drinking Water  
Sample ID: **16533 Orange** Date Collected: 6/23/2013 20:00

Parameters	Results	Units	RDL	DF	Prepared	By	Analyzed	By	Qual	MCL	
										Sec	Prim
METALS											
EPA 200.8			Preparation Method: EPA 200.8 - ICP-MS Metals Prep								
			Analytical Method: EPA 200.8								
Copper	ND	mg/L	0.025	1	7/11/2013 14:15	LG	7/11/2013 19:20	LG	R		1.3
Lead	ND	mg/L	0.001	1	7/11/2013 14:15	LG	7/11/2013 19:20	LG	R		0.015

Report ID: 221025

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## Lead and Copper Sample Results

 Client: IL  
 Address: LP3R001 16533 Orange

 Profile: 373  
 Report Date: 07/16/2013

### Results and Limits

Collection Date	Lead Result (mg/L)	MCLG (mg/L)	Action Level
06/23/2013	ND	0	0.015

Collection Date	Copper Result	MCLG (mg/L)	Action Level
06/23/2013	ND	1.3	1.3

- **Maximum Contaminant Level Goal (MCLG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
- **Action Level:** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- **mg/L:** One milligram per liter (mg/L) is equal to one part per million (ppm), which is approximately the same as 1 second in 11.5 days
- **ug/L:** One microgram per liter (ug/L) is equal to one part per billion (ppb), which is approximately the same as 1 second in 31.7 years

### Language on Health Effects of Lead (from US EPA)

The health effects of lead are most severe for infants and children. For infants and children, exposure to high levels of lead in drinking water can result in delays in physical or mental development. For adults, it can result in kidney problems or high blood pressure. Although the main sources of exposure to lead are ingesting paint chips and inhaling dust, EPA estimates that 10 to 20 percent of human exposure to lead may come from lead in drinking water. Infants who consume mostly mixed formula can receive 40 to 60 percent of their exposure to lead from drinking water.

### Steps Customers Can Take to Reduce Exposure to Lead in Drinking Water (from US EPA)

Flush your pipes before drinking, and only use cold water for consumption. The more time water has been sitting in your home's pipes, the more lead it may contain. Anytime the water in a particular faucet has not been used for six hours or longer, "flush" your cold-water pipes by running the water until it becomes as cold as it will get. This could take as little as five to thirty seconds if there has been recent heavy water use such as showering or toilet flushing. Otherwise, it could take two minutes or longer. Your water utility will inform you if longer flushing times are needed to respond to local conditions.

Use only water from the cold-water tap for drinking, cooking, and especially for making baby formula. Hot water is likely to contain higher levels of lead. The two actions recommended above are very important to the health of your family. They will probably be effective in reducing lead levels because most of the lead in household water usually comes from the plumbing in your house, not from the local water supply.

**More information on lead in drinking water is available on the US EPA web site at <http://www.epa.gov/safewater>.**

Report ID: 221025

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American Water Central Laboratory

1115 South Illinois Street

Belleville, IL 62220-

(618) 235-3600

PWSID IL1970030

Facility ID

## CHAIN OF CUSTODY # 221025

IL 373  
Alpine Heights

Unknown T PBCU (207401)

Scheduled Collect 6/1/2013

## PRIOR TO SHIPPING - COMPLETE ALL FIELDS

Location: Unknown 16533 ORANGE AVE SiteID: LP3R001Site Sample Type (RAW,EFF,DIST,etc.) DSSampler's First Initial and Last Name B. MORANDate Sampled 6/23/13 Time Sampled 8:00 Military (24 hr) Format

TAT requested [rush by adv notice only]

STD ☒ [ 1wk \_\_\_ 3 day \_\_\_ 2 day \_\_\_ 1 day \_\_\_ ]Relinquished by 1 SS 2 L. MORANDate/Time Relinq 1 7/2/13 - 1200 2 7/4/13 3State Reporting by Lab? ☒CCR Report? ☒Received By: [Signature]Date: JUL 10 201324

COMMENTS:

Insufficient Volume

Container ID #	Analyte Description	Prior Preservation	Sample Type
22102501-A	Copper (Pb-Cu Rule) DW TT, Lead (Pb-Cu Rule) DW TT	1 1HNO3	COMP

Monday, April 29, 2013 12:33:25 PM

Tuesday, July 16, 2013 2:01:13 PM

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ED\_004030\_00004412-00006



American Water  
1115 South Illinois Street  
Belleville, IL 62220-3102  
Phone: (618) 235-3600  
Fax: (618) 235-6349

July 16, 2013

Lori L Stenzel  
Illinois American Water  
800 North Front St  
East Saint Louis, IL 62201

RE: Workorder: 220960 14722 Maple Creek Dr T PBCU 1  
Workorder: 368 Homer Twnshp

Dear Lori Stenzel:

Enclosed are the analytical results for sample(s) received by the laboratory on Wednesday, July 10, 2013. All analyses are performed using approved drinking water methodologies and meet method requirements unless otherwise noted. Each state may not offer certification for all analyses reported.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Diane Mueller (Digitally Signed)

Report ID: 220960

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American Water  
1115 South Illinois Street  
Belleville, IL 62220-3102  
Phone: (618) 235-3600  
Fax: (618) 235-6349

## SAMPLE SUMMARY

Client: IL Illinois American Water  
Profile: 368 Homer Township Divison  
Workorder: 220960 14722 Maple Creek Dr T PBCU 1

Lab ID		Sample ID		Matrix	
PWSID	Facility ID	Site ID	Site Sample Type	Certified Lab ID	
<b>22096001</b>		<b>14722 Maple Creek Dr</b>		<b>Drinking Water</b>	
IL1970100	DISTRIBUTION	LP1A043	DS	100203	

Report ID: 220960

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American Water  
1115 South Illinois Street  
Belleville, IL 62220-3102  
Phone: (618) 235-3600  
Fax: (618) 235-6349

## PROJECT SUMMARY

Client: IL Illinois American Water  
Profile: 368 Homer Township Divison  
Workorder: 220960 14722 Maple Creek Dr T PBCU 1

### Sample Comments

Lab ID: 22096001 Sample ID: 14722 Maple Creek Dr Sample Type: COMP  
INSUFFICIENT VOLUME FOR THE PBCU RULE.  
22096001-A 14722 Maple Creek Dr Insufficient Volume or Empty

### Sample Analysis Comments

Lab ID 22096001 Client ID 14722 Maple Creek Dr

#### Analyte/Copper

R = Data is not acceptable for compliance purposes.

#### Analyte/Lead

R = Data is not acceptable for compliance purposes.

### Hits Summary

Sample ID	Compound Name	Results	Units	RDL	DF	Qual	MCL		
							Sec	/	Prim
22096001	Copper	0.071	mg/L	0.025	1	R			1.3

Report ID: 220960

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American Water  
1115 South Illinois Street  
Belleville, IL 62220-3102  
Phone: (618) 235-3600  
Fax: (618) 235-6349

## ANALYTICAL RESULTS

Client: IL Illinois American Water  
Profile: 368 Homer Township Divison  
Workorder: 220960 14722 Maple Creek Dr T PBCU 1

### FOR COMPLIANCE

Lab ID: **22096001** Date Received: 7/10/2013 09:30 Matrix: Drinking Water  
Sample ID: **14722 Maple Creek Dr** Date Collected: 6/28/2013 06:00

Parameters	Results	Units	RDL	DF	Prepared	By	Analyzed	By	Qual	MCL	
										Sec	Prim
METALS											
EPA 200.8			Preparation Method: EPA 200.8 - ICP-MS Metals Prep								
			Analytical Method: EPA 200.8								
Copper	0.071	mg/L	0.025	1	7/11/2013 14:13	LG	7/11/2013 18:17	LG	R		1.3
Lead	ND	mg/L	0.001	1	7/11/2013 14:13	LG	7/11/2013 18:17	LG	R		0.015

Report ID: 220960

Page 4 of 6

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## Lead and Copper Sample Results

 Client: IL  
 Address: LP1A043 14722 Maple Creek Dr

 Profile: 368  
 Report Date: 07/16/2013

### Results and Limits

Collection Date	Lead Result (mg/L)	MCLG (mg/L)	Action Level
06/28/2013	ND	0	0.015

Collection Date	Copper Result	MCLG (mg/L)	Action Level
06/28/2013	0.071	1.3	1.3

- **Maximum Contaminant Level Goal (MCLG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
- **Action Level:** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- **mg/L:** One milligram per liter (mg/L) is equal to one part per million (ppm), which is approximately the same as 1 second in 11.5 days
- **ug/L:** One microgram per liter (ug/L) is equal to one part per billion (ppb), which is approximately the same as 1 second in 31.7 years

### Language on Health Effects of Lead (from US EPA)

The health effects of lead are most severe for infants and children. For infants and children, exposure to high levels of lead in drinking water can result in delays in physical or mental development. For adults, it can result in kidney problems or high blood pressure. Although the main sources of exposure to lead are ingesting paint chips and inhaling dust, EPA estimates that 10 to 20 percent of human exposure to lead may come from lead in drinking water. Infants who consume mostly mixed formula can receive 40 to 60 percent of their exposure to lead from drinking water.

### Steps Customers Can Take to Reduce Exposure to Lead in Drinking Water (from US EPA)

Flush your pipes before drinking, and only use cold water for consumption. The more time water has been sitting in your home's pipes, the more lead it may contain. Anytime the water in a particular faucet has not been used for six hours or longer, "flush" your cold-water pipes by running the water until it becomes as cold as it will get. This could take as little as five to thirty seconds if there has been recent heavy water use such as showering or toilet flushing. Otherwise, it could take two minutes or longer. Your water utility will inform you if longer flushing times are needed to respond to local conditions.

Use only water from the cold-water tap for drinking, cooking, and especially for making baby formula. Hot water is likely to contain higher levels of lead. The two actions recommended above are very important to the health of your family. They will probably be effective in reducing lead levels because most of the lead in household water usually comes from the plumbing in your house, not from the local water supply.

**More information on lead in drinking water is available on the US EPA web site at <http://www.epa.gov/safewater>.**

Report ID: 220960

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American Water Central Laboratory

1115 South Illinois Street

Belleville, IL 62220-

(618) 235-3600

PWSID IL1970100

IL 368 Facility ID

## CHAIN OF CUSTODY # 220960

Homer Township Division Unknown15 T PBCU (207297)

Scheduled Collect 6/1/2013



## PRIOR TO SHIPPING - COMPLETE ALL FIELDS

Location: Unknown 14722 MAPLECREEK DR SiteID: LP1A043

Site Sample Type (RAW,EFF,DIST,etc.) DS

Sampler's First Initial and Last Name D. GALL

Date Sampled 6/29/13 Time Sampled 0600 Military (24 hr) Format

TAT requested [rush by adv notice only]

STD ☒ 1wk ☐ 3 day ☐ 2 day ☐ 1 day ☐

Relinquished by 1 SS 2 M. Rogien 3

Date/Time Relinq 1 7/2/13 - 1200 2 7/15/13 3

State Reporting by Lab? ☒CCR Report? ☒

Received By:

Date:

JUL 10 2013

26

COMMENTS:

Insufficient Volume.

Container ID #	Analysis Description	Pic Preservation	LAB Sample Type
22096001-A	Copper (Pb-Cu Rule) DW TT, Lead (Pb-Cu Rule) DW TT	1 HNO3	COMP

Monday, April 29, 2013 12:18:45 PM

Tuesday, July 16, 2013 10:36:38 AM

Page 6 of 6

ED\_004030\_00004413-00006



American Water  
1115 South Illinois Street  
Belleville, IL 62220-3102  
Phone: (618) 235-3600  
Fax: (618) 235-6349

July 16, 2013

Lori L Stenzel  
Illinois American Water  
800 North Front St  
East Saint Louis, IL 62201

RE: Workorder: 220962 14621 Mustang Dr T PBCU 1  
Workorder: 368 Homer Twnshp

Dear Lori Stenzel:

Enclosed are the analytical results for sample(s) received by the laboratory on Wednesday, July 10, 2013. All analyses are performed using approved drinking water methodologies and meet method requirements unless otherwise noted. Each state may not offer certification for all analyses reported.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Diane Mueller (Digitally Signed)

Report ID: 220962

Page 1 of 6

### CERTIFICATE OF ANALYSIS

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American Water  
1115 South Illinois Street  
Belleville, IL 62220-3102  
Phone: (618) 235-3600  
Fax: (618) 235-6349

## SAMPLE SUMMARY

Client: IL Illinois American Water  
Profile: 368 Homer Township Divison  
Workorder: 220962 14621 Mustang Dr T PBCU 1

Lab ID	Sample ID		Matrix	
PWSID	Facility ID	Site ID	Site Sample Type	Certified Lab ID
<b>22096201</b>	<b>14621 Mustang Dr</b>		<b>Drinking Water</b>	
IL1970100	DISTRIBUTION	LA1A071	DS	100203

Report ID: 220962

Page 2 of 6

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American Water  
1115 South Illinois Street  
Belleville, IL 62220-3102  
Phone: (618) 235-3600  
Fax: (618) 235-6349

## PROJECT SUMMARY

Client: IL Illinois American Water  
Profile: 368 Homer Township Divison  
Workorder: 220962 14621 Mustang Dr T PBCU 1

### Sample Comments

---

<b>Lab ID:</b> 22096201	<b>Sample ID:</b> 14621 Mustang Dr	<b>Sample Type:</b> COMP
INSUFFICIENT VOLUME FOR THE PBCU RULE.		
22096201-A	14621 Mustang Dr	Insufficient Volume or Empty

### Sample Analysis Comments

---

**Lab ID 22096201 Client ID 14621 Mustang Dr**

#### Analyte/Copper

R = Data is not acceptable for compliance purposes.

#### Analyte/Lead

R = Data is not acceptable for compliance purposes.

Report ID: 220962

Page 3 of 6

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American Water  
1115 South Illinois Street  
Belleville, IL 62220-3102  
Phone: (618) 235-3600  
Fax: (618) 235-6349

## ANALYTICAL RESULTS

Client: IL Illinois American Water  
Profile: 368 Homer Township Divison  
Workorder: 220962 14621 Mustang Dr T PBCU 1

### FOR COMPLIANCE

Lab ID: **22096201** Date Received: 7/10/2013 09:30 Matrix: Drinking Water  
Sample ID: **14621 Mustang Dr** Date Collected: 6/27/2013 06:00

Parameters	Results	Units	RDL	DF	Prepared	By	Analyzed	By	Qual	MCL	
										Sec	Prim
METALS											
EPA 200.8			Preparation Method: EPA 200.8 - ICP-MS Metals Prep								
			Analytical Method: EPA 200.8								
Copper	ND	mg/L	0.025	1	7/11/2013 14:13	LG	7/11/2013 18:20	LG	R		1.3
Lead	ND	mg/L	0.001	1	7/11/2013 14:13	LG	7/11/2013 18:20	LG	R		0.015

Report ID: 220962

Page 4 of 6

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## Lead and Copper Sample Results

 Client: IL  
 Address: LA1A071 14621 Mustang

 Profile: 368  
 Report Date: 07/16/2013

### Results and Limits

Collection Date	Lead Result (mg/L)	MCLG (mg/L)	Action Level
06/27/2013	ND	0	0.015

Collection Date	Copper Result	MCLG (mg/L)	Action Level
06/27/2013	ND	1.3	1.3

- **Maximum Contaminant Level Goal (MCLG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
- **Action Level:** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- **mg/L:** One milligram per liter (mg/L) is equal to one part per million (ppm), which is approximately the same as 1 second in 11.5 days
- **ug/L:** One microgram per liter (ug/L) is equal to one part per billion (ppb), which is approximately the same as 1 second in 31.7 years

### Language on Health Effects of Lead (from US EPA)

The health effects of lead are most severe for infants and children. For infants and children, exposure to high levels of lead in drinking water can result in delays in physical or mental development. For adults, it can result in kidney problems or high blood pressure. Although the main sources of exposure to lead are ingesting paint chips and inhaling dust, EPA estimates that 10 to 20 percent of human exposure to lead may come from lead in drinking water. Infants who consume mostly mixed formula can receive 40 to 60 percent of their exposure to lead from drinking water.

### Steps Customers Can Take to Reduce Exposure to Lead in Drinking Water (from US EPA)

Flush your pipes before drinking, and only use cold water for consumption. The more time water has been sitting in your home's pipes, the more lead it may contain. Anytime the water in a particular faucet has not been used for six hours or longer, "flush" your cold-water pipes by running the water until it becomes as cold as it will get. This could take as little as five to thirty seconds if there has been recent heavy water use such as showering or toilet flushing. Otherwise, it could take two minutes or longer. Your water utility will inform you if longer flushing times are needed to respond to local conditions.

Use only water from the cold-water tap for drinking, cooking, and especially for making baby formula. Hot water is likely to contain higher levels of lead. The two actions recommended above are very important to the health of your family. They will probably be effective in reducing lead levels because most of the lead in household water usually comes from the plumbing in your house, not from the local water supply.

**More information on lead in drinking water is available on the US EPA web site at <http://www.epa.gov/safewater>.**

Report ID: 220962

Page 5 of 6

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American Water Central Laboratory

1115 South Illinois Street

Belleville, IL 62220-

(618) 235-3600

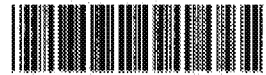
PWSID IL1970100

IL 368 Facility ID

## CHAIN OF CUSTODY # 220962

Homer Township Division Unknown17 T PBCU (207301)

Scheduled Collect 6/1/2013



## PRIOR TO SHIPPING - COMPLETE ALL FIELDS

Location: Unknown 14621 Mustang Dr SiteID: LA1A071Site Sample Type (RAW,EFF,DIST,etc.) DSSampler's First Initial and Last Name B. SALAMEHDate Sampled 6/27/13 Time Sampled 0600 Military (24 hr) Format

TAT requested (rush by adv notice only)

STD ☒ [1wk ☐ 3 day ☐ 2 day ☐ 1 day ☐Relinquished by 1 SS 2 lnalasin 3 Date/Time Relinq 1 7/2/13 -1200 2 7/9/13 3 State Reporting by Lab? ☒CCR Report? ☒Received By: 26

Date:

JUL 10 2013

COMMENTS:

Insufficient Volume

Container ID#	Analysis Description	Pres/Preservation	Lab Sample Type
22096201-A	Copper (Pb-Cu Rule) DW TT, Lead (Pb-Cu Rule) DW TT	1 1HNO3	COMP

Monday, April 29, 2013 12:19:45 PM

Tuesday, July 16, 2013 10:37:07 AM

Page 6 of 6

ED\_004030\_00004414-00006



American Water  
1115 South Illinois Street  
Belleville, IL 62220-3102  
Phone: (618) 235-3600  
Fax: (618) 235-6349

July 16, 2013

Lori L Stenzel  
Illinois American Water  
800 North Front St  
East Saint Louis, IL 62201

RE: Workorder: 220965 12348 Prairie T PBCU 1  
Workorder: 368 Homer Twnshp

Dear Lori Stenzel:

Enclosed are the analytical results for sample(s) received by the laboratory on Wednesday, July 10, 2013. All analyses are performed using approved drinking water methodologies and meet method requirements unless otherwise noted. Each state may not offer certification for all analyses reported.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Diane Mueller (Digitally Signed)

Report ID: 220965

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American Water  
1115 South Illinois Street  
Belleville, IL 62220-3102  
Phone: (618) 235-3600  
Fax: (618) 235-6349

## SAMPLE SUMMARY

Client: IL Illinois American Water  
Profile: 368 Homer Township Divison  
Workorder: 220965 12348 Prairie T PBCU 1

Lab ID	Sample ID		Matrix	
	PWSID	Facility ID	Site ID	Certified Lab ID
<b>22096501</b>		<b>12348 Prairie</b>		<b>Drinking Water</b>
	IL1970100	DISTRIBUTION	LA1A061	DS
				100203

Report ID: 220965

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American Water  
1115 South Illinois Street  
Belleville, IL 62220-3102  
Phone: (618) 235-3600  
Fax: (618) 235-6349

## PROJECT SUMMARY

Client: IL Illinois American Water  
Profile: 368 Homer Township Divison  
Workorder: 220965 12348 Prairie T PBCU 1

### Sample Comments

Lab ID: 22096501      Sample ID: 12348 Prairie      Sample Type: COMP  
INSUFFICIENT VOLUME FOR THE PBCU RULE.  
22096501-A      12348 Prairie      Insufficient Volume or Empty

### Sample Analysis Comments

Lab ID 22096501    Client ID 12348 Prairie

#### Analyte/Copper

R = Data is not acceptable for compliance purposes.

#### Analyte/Lead

R = Data is not acceptable for compliance purposes.

### Hits Summary

Sample ID	Compound Name	Results	Units	RDL	DF	Qual	MCL		
							Sec	/	Prim
22096501	Copper	0.050	mg/L	0.025	1	R			1.3

Report ID: 220965

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American Water  
1115 South Illinois Street  
Belleville, IL 62220-3102  
Phone: (618) 235-3600  
Fax: (618) 235-6349

## ANALYTICAL RESULTS

Client: IL Illinois American Water  
Profile: 368 Homer Township Divison  
Workorder: 220965 12348 Prairie T PBCU 1

### FOR COMPLIANCE

Lab ID: **22096501** Date Received: 7/10/2013 09:30 Matrix: Drinking Water  
Sample ID: **12348 Prairie** Date Collected: 6/27/2013 05:25

Parameters	Results	Units	RDL	DF	Prepared	By	Analyzed	By	Qual	MCL	
										Sec	Prim
METALS											
EPA 200.8			Preparation Method: EPA 200.8 - ICP-MS Metals Prep								
			Analytical Method: EPA 200.8								
Copper	0.050	mg/L	0.025	1	7/11/2013 14:13	LG	7/11/2013 18:26	LG	R		1.3
Lead	ND	mg/L	0.001	1	7/11/2013 14:13	LG	7/11/2013 18:26	LG	R		0.015

Report ID: 220965

Page 4 of 6

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## Lead and Copper Sample Results

 Client: IL  
 Address: LA1A061 12348 Prairie Drive

 Profile: 368  
 Report Date: 07/16/2013

### Results and Limits

Collection Date	Lead Result (mg/L)	MCLG (mg/L)	Action Level
06/27/2013	ND	0	0.015

Collection Date	Copper Result	MCLG (mg/L)	Action Level
06/27/2013	0.050	1.3	1.3

- **Maximum Contaminant Level Goal (MCLG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
- **Action Level:** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- **mg/L:** One milligram per liter (mg/L) is equal to one part per million (ppm), which is approximately the same as 1 second in 11.5 days
- **ug/L:** One microgram per liter (ug/L) is equal to one part per billion (ppb), which is approximately the same as 1 second in 31.7 years

### Language on Health Effects of Lead (from US EPA)

The health effects of lead are most severe for infants and children. For infants and children, exposure to high levels of lead in drinking water can result in delays in physical or mental development. For adults, it can result in kidney problems or high blood pressure. Although the main sources of exposure to lead are ingesting paint chips and inhaling dust, EPA estimates that 10 to 20 percent of human exposure to lead may come from lead in drinking water. Infants who consume mostly mixed formula can receive 40 to 60 percent of their exposure to lead from drinking water.

### Steps Customers Can Take to Reduce Exposure to Lead in Drinking Water (from US EPA)

Flush your pipes before drinking, and only use cold water for consumption. The more time water has been sitting in your home's pipes, the more lead it may contain. Anytime the water in a particular faucet has not been used for six hours or longer, "flush" your cold-water pipes by running the water until it becomes as cold as it will get. This could take as little as five to thirty seconds if there has been recent heavy water use such as showering or toilet flushing. Otherwise, it could take two minutes or longer. Your water utility will inform you if longer flushing times are needed to respond to local conditions.

Use only water from the cold-water tap for drinking, cooking, and especially for making baby formula. Hot water is likely to contain higher levels of lead. The two actions recommended above are very important to the health of your family. They will probably be effective in reducing lead levels because most of the lead in household water usually comes from the plumbing in your house, not from the local water supply.

**More information on lead in drinking water is available on the US EPA web site at <http://www.epa.gov/safewater>.**

Report ID: 220965

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American Water Central Laboratory

1115 South Illinois Street

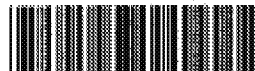
Belleville, IL 62220

(618) 235-3600

PWSID IL1970100

Facility ID

## CHAIN OF CUSTODY # 220965



IL 368

Homer Township Division

Unknown19 T PBCU (207307)

Scheduled Collect 6/1/2013

## PRIOR TO SHIPPING - COMPLETE ALL FIELDS

Location: Unknown 12349 PRAIRIE DR SiteID: LA1A061Site Sample Type (RAW,EFF,DIST,etc.) DSSampler's First Initial and Last Name G. DENKERIENEDate Sampled 6/27/13 Time Sampled 0525 Military (24 hr) Format

TAT requested [rush by adv notice only]

STD ☒ 1wk ☐ 3 day ☐ 2 day ☐ 1 day ☐Relinquished by 1 95 2 (signature) 3 Date/Time Relinq 1 7/2/13 2 7/9/13 3 State Reporting by Lab? ☒CCR Report? ☒Received By: (signature)Title: 24Date: Jul 10 2013

COMMENTS:

Insufficient Volume

Container ID#	Analyte Description	Preservation	Lab Sample Type
22096501-A	Copper (Pb-Cu Rule) DW TT Lead (Pb-Cu Rule) DW TT	1:1HNO3	COMP

Monday, April 28, 2013 12:19:45 PM

Tuesday, July 16, 2013 10:38:06 AM

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ED\_004030\_00004415-00006





American Water  
1115 South Illinois Street  
Belleville, IL 62220-3102  
Phone: (618) 235-3600  
Fax: (618) 235-6349

July 16, 2013

Lori L Stenzel  
Illinois American Water  
800 North Front St  
East Saint Louis, IL 62201

RE: Workorder: 220969 12434 Martingale Ln T PBCU 1  
Workorder: 368 Homer Twnshp

Dear Lori Stenzel:

Enclosed are the analytical results for sample(s) received by the laboratory on Wednesday, July 10, 2013. All analyses are performed using approved drinking water methodologies and meet method requirements unless otherwise noted. Each state may not offer certification for all analyses reported.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Diane Mueller (Digitally Signed)

Report ID: 220969

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American Water  
1115 South Illinois Street  
Belleville, IL 62220-3102  
Phone: (618) 235-3600  
Fax: (618) 235-6349

## SAMPLE SUMMARY

Client: IL Illinois American Water  
Profile: 368 Homer Township Divison  
Workorder: 220969 12434 Martingale Ln T PBCU 1

Lab ID		Sample ID		Matrix	
PWSID	Facility ID	Site ID	Site Sample Type	Certified Lab ID	
<b>22096901</b>		<b>12434 Martingale Ln</b>		<b>Drinking Water</b>	
IL1970100	DISTRIBUTION	LP1A054	DS	100203	

Report ID: 220969

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American Water  
1115 South Illinois Street  
Belleville, IL 62220-3102  
Phone: (618) 235-3600  
Fax: (618) 235-6349

## PROJECT SUMMARY

Client: IL Illinois American Water  
Profile: 368 Homer Township Divison  
Workorder: 220969 12434 Martingale Ln T PBCU 1

### Sample Comments

Lab ID: 22096901 Sample ID: 12434 Martingale Ln Sample Type: COMP  
INSUFFICIENT VOLUME FOR THE PBCU RULE.  
22096901-A 12434 Martingale Ln Insufficient Volume or Empty

### Sample Analysis Comments

Lab ID 22096901 Client ID 12434 Martingale Ln

#### Analyte/Copper

R = Data is not acceptable for compliance purposes.

#### Analyte/Lead

R = Data is not acceptable for compliance purposes.

### Hits Summary

Sample ID	Compound Name	Results	Units	RDL	DF	Qual	MCL		
							Sec	/	Prim
22096901	Copper	0.096	mg/L	0.025	1	R			1.3

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American Water  
1115 South Illinois Street  
Belleville, IL 62220-3102  
Phone: (618) 235-3600  
Fax: (618) 235-6349

## ANALYTICAL RESULTS

Client: IL Illinois American Water  
Profile: 368 Homer Township Divison  
Workorder: 220969 12434 Martingale Ln T PBCU 1

### FOR COMPLIANCE

Lab ID: **22096901** Date Received: 7/10/2013 09:30 Matrix: Drinking Water  
Sample ID: **12434 Martingale Ln** Date Collected: 6/27/2013 06:00

Parameters	Results	Units	RDL	DF	Prepared	By	Analyzed	By	Qual	MCL	
										Sec	Prim
METALS											
EPA 200.8			Preparation Method: EPA 200.8 - ICP-MS Metals Prep								
			Analytical Method: EPA 200.8								
Copper	0.096	mg/L	0.025	1	7/11/2013 14:13	LG	7/11/2013 18:42	LG	R		1.3
Lead	ND	mg/L	0.001	1	7/11/2013 14:13	LG	7/11/2013 18:42	LG	R		0.015

Report ID: 220969

Page 4 of 6

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## Lead and Copper Sample Results

 Client: IL  
 Address: LP1A054 12434 Martingale Lane

 Profile: 368  
 Report Date: 07/16/2013

### Results and Limits

Collection Date	Lead Result (mg/L)	MCLG (mg/L)	Action Level
06/27/2013	ND	0	0.015

Collection Date	Copper Result	MCLG (mg/L)	Action Level
06/27/2013	0.096	1.3	1.3

- **Maximum Contaminant Level Goal (MCLG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
- **Action Level:** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- **mg/L:** One milligram per liter (mg/L) is equal to one part per million (ppm), which is approximately the same as 1 second in 11.5 days
- **ug/L:** One microgram per liter (ug/L) is equal to one part per billion (ppb), which is approximately the same as 1 second in 31.7 years

### Language on Health Effects of Lead (from US EPA)

The health effects of lead are most severe for infants and children. For infants and children, exposure to high levels of lead in drinking water can result in delays in physical or mental development. For adults, it can result in kidney problems or high blood pressure. Although the main sources of exposure to lead are ingesting paint chips and inhaling dust, EPA estimates that 10 to 20 percent of human exposure to lead may come from lead in drinking water. Infants who consume mostly mixed formula can receive 40 to 60 percent of their exposure to lead from drinking water.

### Steps Customers Can Take to Reduce Exposure to Lead in Drinking Water (from US EPA)

Flush your pipes before drinking, and only use cold water for consumption. The more time water has been sitting in your home's pipes, the more lead it may contain. Anytime the water in a particular faucet has not been used for six hours or longer, "flush" your cold-water pipes by running the water until it becomes as cold as it will get. This could take as little as five to thirty seconds if there has been recent heavy water use such as showering or toilet flushing. Otherwise, it could take two minutes or longer. Your water utility will inform you if longer flushing times are needed to respond to local conditions.

Use only water from the cold-water tap for drinking, cooking, and especially for making baby formula. Hot water is likely to contain higher levels of lead. The two actions recommended above are very important to the health of your family. They will probably be effective in reducing lead levels because most of the lead in household water usually comes from the plumbing in your house, not from the local water supply.

**More information on lead in drinking water is available on the US EPA web site at <http://www.epa.gov/safewater>.**

Report ID: 220969

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American Water Central Laboratory

1115 South Illinois Street

Belleville, IL 62220-

(618) 235-3600

PWSID IL1970100

## CHAIN OF CUSTODY # 220969



IL 358 Facility ID

Homer Township Division Unknown22 T PBCU (207314)

Scheduled Collect 6/1/2013

## PRIOR TO SHIPPING - COMPLETE ALL FIELDS

Location: Unknown 12434 MARTINGALE LN SiteID: LPIA054Site Sample Type (RAW,EFF,DIST,etc.) DSSampler's First Initial and Last Name L. SOLIMENDODate Sampled 6/27/13 Time Sampled 0600 Military (24 hr) Format

TAT requested (rush by adv notice only)

STD    [ 1wk    3 day    2 day    1 day    ]Relinquished by 1 SS 2 (marcosin)Date/Time Relinq 1 7/2/13 - 1200 2 114530 3   State Reporting by Lab? ☒CCR Report? ☒Received By: (Signature)Date: JUL 1 4 2013

COMMENTS:

Insufficient Volume

Container ID #

Analysis Description

Pre-Preservation

LIMS  
Sample  
Type

22096901-A Copper (Pb-Cu Rule) DW TT, Lead (Pb-Cu Rule) DW TT

1:1HNO3

COMP

Monday, April 29, 2013 12:19:45 PM

Tuesday, July 16, 2013 10:39:49 AM

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ED\_004030\_00004416-00006

## Lead/Copper Sample Collection Instructions

When collecting lead and copper tap samples, you must follow the procedures listed below:

- Always collect a 1-liter sample in one container only (e.g., do not split the sample between two containers).
- Always collect a first-draw sample from a tap where the water has stood in the pipes for at least six hours (e.g., no flushing, showering, etc). However, make sure it is a tap that is used regularly, and not an abandoned or infrequently used tap.
- If your water system is a NTNCWS or CWS (such as a prison or hospital) that does not have enough inside taps where the water stands unused for at least six hours, you are allowed to use interior taps from which water is typically drawn for consumption and which are the most likely to have remained unused for the longest period of time.
- First-draw samples collected at single-family residences should always be drawn from the cold-water kitchen tap or bathroom tap.
- First-draw samples collected from buildings other than single-family homes should always be drawn from an interior tap from which water is typically taken for consumption.
- You may allow residents to collect sample, but you must supply the residents with instructions as to the sample collection procedures. Be sure to properly label sample bottles prior to distributing them to residents.
- As a general rule, you should collect your lead and copper tap water samples early in the monitoring period in case you exceed the lead or copper action level. This is because you will be required to also collect WQP samples during the same monitoring period (refer to Section III for a more detailed discussion of WQP monitoring). In addition, you will need to submit your monitoring results within 10 days after the end of the monitoring period (e.g., by October 10 for systems that monitoring during June - September).
- After the sample is drawn, acidification of the sample should be completed by the laboratory personnel upon receipt of the sample, but in no case later than 14 days after sample collection. Neither the homeowner nor the sample collector should handle the nitric acid used for sample acidification.

If you cannot gain access to an original sampling site during any subsequent sample collections, the CWS should select an alternate site that has been previously approved. In this event, you will need to contact the Illinois EPA Lead /Copper Coordinator at 217-785-0561 to get the switch recorded in State records.

## Suggested Directions for Homeowner Tap Sample Collection Procedures

These samples are being collected to determine the lead and copper levels in your tap water. This sampling effort is required by the U.S. Environmental Protection Agency and your State, and is being accomplished through the cooperation of homeowners and residents.

Please read the following directions prior to collection of the sample.

1. Prior arrangements will be made with the customer to coordinate the sample collection event. Dates will be set for sample kit delivery and pick-up by water department staff.
2. There must be a minimum of 6 hours during which there is no water used from the tap the sample is taken from and any taps adjacent or close to that tap. The water department recommends that either early mornings or evenings upon returning home are the best sampling times to collect the sample.
3. A kitchen or bathroom cold-water faucet is to be used for sampling. Be sure to use a faucet that has been in recent general use by your household. If you have a water softener on your kitchen tap, collect your sample from the bathroom tap that is not attached to a water softener, if possible. **Do not remove the aerator prior to sampling.** Place the opened sample bottle below the faucet and gently open the cold water tap. Fill the sample bottle to the line marked "1000-mL" and turn off the water.

DO NOT FLUSH ANY WATER FROM YOUR FAUCET PRIOR TO FILLING THE BOTTLE

4. Tightly cap the sample bottle and place in the sample kit provided. Please review the sample kit label at this time to ensure that all information contained on the label is correct.
5. ***IF ANY PLUMBING REPAIRS OR REPLACEMENT HAS BEEN DONE IN THE HOME SINCE THE PREVIOUS SAMPLING EVENT, NOTE THIS INFORMATION ON THE LABEL AS PROVIDED. ALSO IF YOUR SAMPLE WAS COLLECTED FROM A TAP WITH A WATER SOFTENER, NOTE THIS AS WELL.***
6. Place the sample kit outside of the residence in the location of the kit's delivery so that department staff may pick up the sample kit.
7. Results from this monitoring effort will be provided to participating customers when reports are generated for the State. However, if excessive lead and/or copper levels are found, immediate notification will be provided (usually 10 working days from the time of sample collection).

Call \_\_\_\_\_ at \_\_\_\_\_ if you have any questions regarding these instructions.

TO BE COMPLETED BY RESIDENT		
Water was last used:	Time _____	Date _____
Sample was collected:	Time _____	Date _____
I have read the above directions and have taken a tap sample in accordance with these directions.		
_____ Signature	_____ Date	



FY2014 WI DNR PUBLIC WATER SYSTEM SUPERVISION PROGRAM  
WORK PLAN SUMMARY  
October 1, 2013, through September 30, 2014

**Contacts:**

- WI DNR Public Water Supply Section Chief – Steve Elmore,  
Steve.Elmore@wisconsin.gov, (608) 264-9246
- U.S. EPA Region 5 (R5) WI State Program Manager – Joe Janczy,  
[ [HYPERLINK "mailto:Janczy.Joseph@epa.gov"](mailto:Janczy.Joseph@epa.gov) ], (608) 267-2763

The Public Water System Supervision Program (PWSS) is authorized by the Safe Drinking Water Act (SDWA). SDWA regulatory requirements for public water systems (PWS) are implemented through the PWSS program. The ultimate goal of the program is the protection of human health via safe water from PWSs. The program achieves this goal when:

- A. PWSs remain in compliance, or take corrective actions to return to compliance with rules that are at least as stringent as the National Primary Drinking Water Regulations.
- B. PWSs maintain adequate technical, financial, and managerial capacity to provide safe drinking water.

Except for PWSs on tribal lands, EPA delegates the authority to implement the PWSS program in Wisconsin to the State, funds and coordinates implementation with the WI DNR, and oversees implementation. Expected programmatic outputs from WI DNR are to:

- Prevent risk to human health through periodic sanitary surveys
- Inform PWSs of non-compliance, or potential for non-compliance
- Use formal enforcement to regain PWS compliance
- Ensure that drinking water infrastructure projects meet industry standards
- Ensure that PWSs have properly certified operators
- Maintain a data system that is capable of accepting compliance and other program data
- Report required data to EPA and implement a recordkeeping system

**Federal funding used:** PWSS grant; Drinking Water State Revolving Fund (DWSRF) State program management, local assistance (for capacity development and wellhead protection), and small system technical assistance set-asides; and Clean Water Act Section 106 funds (ground water)

1. [\[HYPERLINK](https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015BBF6.nsf?OpenDatabase)

["https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015BBF6.nsf?OpenDatabase"\]](https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015BBF6.nsf?OpenDatabase) — WI DNR implements all of the drinking water rules, except for remaining discrepancies noted in Attachment A. WI DNR does not have primacy for FBRR, LT2SWTR, GWR, LCRSTR, Stage 2 D/DBPR, and V & E, but has submitted them to R5 for primacy review, and is implementing them. R5 completed review of GWR and LCRSTR and corresponded with WDNR about necessary revisions. R5 agrees to provide WI DNR with correspondence on necessary revisions to FBRR, LT2SWTR, Stage 2 D/DBPR and V & E by December 31, 2013. R5

tracks state reporting of new rule violations (LT2SWTR, GWR, LCR, and Stage 2 D/DBPR). As of April 2013, WI DNR reported:

- No LT2 violations
- 281 GWR source water M/R violations
- 30 Stage 2 M/R violations
- 443 LCRSTR consumer notification M/R violations

2. [HYPERLINK

"<https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C700157D04.nsf?OpenDatabase>"] — WI DNR maintains staff with the technical expertise needed to perform sanitary surveys. WI DNR ensures that sanitary surveys are conducted periodically that, in the vast majority of cases, meet frequency requirements specified by rule as measured under OW NPM Guidance Measure SDW-1a. For TNs in contracted counties, WI DNR must manage and continue to evaluate the performance of sanitary surveys conducted by county health departments by reviewing the extent to which significant deficiencies are being identified, and whether frequency requirements are being met. R5 tracks state commitments to conduct sanitary surveys within the federally required intervals. As of April 2013:

- SURFACE WATER SYSTEMS: 100% (56/56) of the sanitary surveys at Subpart H systems were completed between 2010 and 2012.
- GROUND WATER SYSTEMS: 97.9% (973/994) of CWSs were completed between 2010 and 2012. 99.6% (779/782) of NTNCWSs and 99.6% (8822/8855) of TNCWSs were completed between 2008 and 2012.

3. [HYPERLINK

"[https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70016055A.nsf/h\\_Toc/50a7a2f7c68b0990852579c7001671af/?OpenDocument](https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70016055A.nsf/h_Toc/50a7a2f7c68b0990852579c7001671af/?OpenDocument)"] — The state is meeting expectations because: (1) R 5 maintains certification for the Wisconsin State Laboratory of Hygiene (WSLH), (2) the program uses direct certification and reciprocal agreements to certify commercial labs within the state, and (3) a process for ensuring capacity to analyze at the principal state lab or commercial labs all NPDWR parameters that are required to be sampled in the state is maintained. Laboratory certification responsibilities in Wisconsin are split between the WI DNR (chems), and WI DATCP (micro). Potential future areas of concern include certifying labs for radionuclide and asbestos analysis.

4. [HYPERLINK

"<https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015D26C.nsf?OpenDatabase>"] — WI DNR will ensure public water systems regain compliance with NPDWRs. R5 tracks state commitments under OECA measure 5.1.3 (SDWA02) and updates WI DNR quarterly. WI DNR's 2013 commitment is to address or resolve 38 systems. For 2014, WI DNR commits to address or resolve 51 systems. WI DNR does not commit to follow-up on CCR, and LCR Consumer Notification violations or to follow-up on PN violations originating from Tier 2 and 3 violations at this time.

5. [HYPERLINK

"<https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C700159C89.nsf?OpenDatabase>"] — WI DNR maintains a data management system that tracks requirements for all rules and serves as the central store of data reported by laboratories, field

offices and County Health Departments. WI DNR commits to upgrade to FedRep 3.4 by November 15, 2013, so that all GWR TT violations and associated significant deficiency corrective action information is provided correctly to EPA by February 15, 2014. PWS Monthly Operating Report information is now being submitted, captured and stored electronically in DWS. This data will eventually be used to automatically determine compliance with SWTRs. WI DNR's reporting of TCR and nitrate violations continue to improve. In 2012, 99.6% of the TCR violations and 100% of the nitrate violations were reported on-time.

Security – As part of its primacy application, WDNR developed a plan for the provision of safe drinking water under emergency circumstances, including but not limited to, natural disasters. Preparedness for ensuring safe drinking water under emergency circumstances includes increasing security and resiliency of water utilities, and communities as a whole.

7. [HYPERLINK

"<https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C700158EB5.nsf?OpenDatabase>"] —WI DNR established and maintains minimum professional standards for the operation and maintenance of all public water systems to ensure that skilled professionals are overseeing the treatment and distribution of safe drinking water and to promote compliance. WI DNR provides – by September 30<sup>th</sup> each year – documentation to EPA showing the ongoing implementation of the program to avoid 20% withholding of the DWSRF grant. On June 30, 2012, only 10 of the 1,919 WI systems required to have a certified operator did not have one. WI DNR improved its data system to revise exams more efficiently. It should update its study guide and exam questions to reflect new rule requirements.

8. [HYPERLINK

"<https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C700158751.nsf?OpenDatabase>"] —WI DNR ensures that new and existing CWSs/NTNCWSs can demonstrate technical, managerial, and financial capacity to operate in compliance with federal and state regulations. WI DNR annually - by December 31<sup>st</sup> each year - provides documentation to R5 showing the ongoing implementation of both the new systems program and the existing systems strategy to avoid 20% withholding of the DWSRF capitalization grant. The annual report should address the new capacity development reporting measures. Some examples of the numerous activities taken by the WI DNR to strengthen system capacity in FFY 2012 include:

- Reviewed 648 water system engineering plans to provide an initial safeguard for new projects, like installing new wells, water treatment systems, well facilities, water mains, and developing wellhead protection plans.
- Launched a new version of the Mobile Sanitary Survey System software program for field use on tablet and laptop PCs.
- Enhanced consistency and improved data accuracy by launching a new internet based County Sanitary Survey System for contracted county staff that perform sanitary surveys and collect water samples at transient non-community water systems in 45 WI counties.

R5 wants to know when WI DNR will end the LCR consumer notification disinvestment. It was the stated reason why 35% of the new systems that became active in the last three years had active violations.

9. [HYPERLINK

"<https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015F083.nsf?OpenDatabase>"] —WI DNR reports the number of CWSs with source water protection (SWP) plans and the number of CWSs implementing SWP measures (electronically via SDWIS, if possible) as of June 30 by August 15, annually. WI DNR commits to meeting the targets negotiated under OW NPM Guidance Measure SP-4a and b to minimize risk at CWSs through source water protection for both CWSs and their population served. WI DNR will update source water assessments, as resources allow, especially in prioritized areas, and complete source water assessment reports for new public water systems. WI DNR recently modified its wellhead protection program to include a facilitated incentive approach for geographic target areas. WI DNR is facilitating actions with partners and stakeholders in two areas of Rock and Sauk Counties to field truth if measureable nitrate reductions in groundwater can be achieved and sustained cost effectively, and has reached out to the National Source Water Collaborative for help in the effort.

10. [HYPERLINK

"<https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015F8CA.nsf?OpenDatabase>"] —There are multiple national measures in the national program manager guidance that support the “water safe to drink” subobjective 2.1.1 in EPA’s strategic plan, and R5 is also tracking several other measures, including those in the logic model reporting tool, regional shared goals, and regional high priority queries. The most recent data for Wisconsin for each of these measures are available via the “measures and indicators” link on the *Region 5 State PWSS Programs* Quickr site, some of which have been described above in this work plan summary. R5 will provide WI DNR with aggregated trends data from the LMRT for the period 2002-2012 by December 31, 2013.

11. Resources and expertise —WI DNR maintains a baseline core of individuals with the technical expertise to carry out all mandatory components of the PWSS Program (including engineering plan and specification review and emergency response) . In 2012, WI DNR had the equivalent of nearly 73 full-time staff working with the 11,409 public water systems. Sixty-three percent of the 2012 PWSS program budget was federally funded.

Contracts with third parties conducting mandatory components of the PWSS Program will make performance expectations clear, and will be measured and evaluated by the Department. In 2012, sixteen percent of the budget went to contracts with associations, county health departments, and consultants.

WI DNR develops and implements a plan to provide adequate funding to carry out all functions of the PWSS program and has been recently successful at filling vacancies. R5 wants WI DNR to continue progress in reinvesting to close acknowledged program discrepancies.

## **Attachment A**

***WDNR acknowledges the following disinvestments from its primary responsibility to implement and enforce National Primary Drinking Water Regulations (NPDWR) during the October 2013 to September 2014 timeframe.***

### **1. Lead and Copper Rule – Consumer Notification**

All water systems must provide a notice of the individual tap results from lead tap water monitoring to the persons served by the water system at the specific sampling site from which the sample was taken (e.g., the occupants of the residence where the tap was tested). A water system must provide the consumer notice, along with other required information, as soon as practical, but no later than 30 days after the system learns of the tap monitoring results.

No later than 3 months following the end of the monitoring period, each system must mail a sample copy of the consumer notification of tap results to the State along with a certification that the notification has been distributed in a manner consistent with rule requirements.

WDNR began tracking compliance with lead consumer notification requirements with the monitoring period that ended on September 30, 2011. WDNR began reporting these violations to EPA in May 2012 but makes no commitment to follow-up on them. WDNR will weigh whether current resources are sufficient to change this policy and inform Region 5 of its decision by October 1, 2013.

## 2. Public Notification (PN) Rule Enforcement –

- a. WDNR will report PN violations for Tier 2 and Tier 3 violations to SDWIS-FED. They will not take steps to return these violations to compliance. WDNR will weigh whether current resources are sufficient to change this policy and inform Region 5 of its decision by October 1, 2013.
- b. WDNR will only commit to report PN violations to EPA that are generated from data system programming logic. For example, they will not commit to update their data system to track PN violations that are stipulated as part of an enforcement order. Therefore, those PN violations will not be reported to EPA.

## 3. Consumer Confidence Rule Enforcement –

- a. WDNR will report Consumer Confidence Report (CCR) violations to SDWIS-FED. They will not take steps to return these violations to compliance. WDNR will weigh whether current resources are sufficient to change this policy and inform Region 5 of its decision by October 1, 2013.
- b. WDNR will not report CCRs received between July 1 and July 10 as a CCR “failure to report” violation.

4. Total Coliform Rule (sanitary surveys and monitoring schedules) - A non-community water system serving 1,000 persons or fewer must monitor each calendar quarter that the system provides water to the public, except that the WDNR may reduce this monitoring frequency, in writing, if a sanitary survey shows that the system is free of sanitary defects. The WDNR cannot reduce the monitoring frequency for these systems to less than once/year. Non-community water systems must undergo sanitary surveys every five years, unless the WDNR determines the ground water is protected and disinfected.

Approximately 80% of the 10,000-plus Wisconsin non-community water systems (NCWS) are allowed by the WDNR to monitor once/year. NCWSs assigned annual monitoring schedules by WDNR should be given quarterly schedules when sanitary surveys are not conducted at proper intervals.

WDNR does not commit to assign and report NCWS monitoring violations that occur when annual requirements change to quarterly because a sanitary survey is not updated within 5 years. However, WDNR has made significant progress in completing sanitary survey every five years, so fewer NCWSs need to change their monitoring frequency from annual to quarterly.

## 5. Radionuclides Rule Reporting Violations

WDNR does not commit to report or enforce reporting violations when CWSs send radionuclide samples to laboratories by the end of the appropriate monitoring period, but due to lab backlog, results are not generated that satisfy reporting requirements.

*6. Ground Water Rule SDWIS Reporting*

WDNR does not commit to meet all SDWIS reporting requirements until February 15, 2014.

*7. Stage 2 Disinfectants/Disinfection By-Products Rule SDWIS Reporting*

WDNR does not commit to meet all SDWIS reporting requirements until February 15, 2014.

*8. Violations identified in Data Verifications*

WDNR does not commit to issue violations to water systems retroactively after they are identified during data verifications but were not previously identified by the WDNR. These violations will not be reported to EPA.

***USEPA Region 5 acknowledges progress made by WDNR to reinvest in areas previously disinvested to improve PWSS program implementation in Wisconsin.***

*1. TCR Holding Time*

WDNR now only accepts TCR results where the initiation of analysis does not exceed 30 hours.

*2. TCR Repeat Monitoring Extensions*

The WDNR's database automatically determines TCR repeat monitoring violations after seven days from the collection of a total coliform-positive compliance sample. Previously, the database was programmed to allow up to 28 days before automatically generating the TCR repeat sampling violation. Region 5 determined this timeframe to be too long of a period for a TCR repeat monitoring extension.

*3. Phase 2/5 monitoring waivers*

WDNR recognizes an opportunity to reduce monitoring requirements for inorganic chemicals, volatile organic compounds, and synthetic organic chemicals for some public water systems based on their lack of occurrence during historical sampling. Because hiring restrictions were eased, WDNR is now able to revise its monitoring waiver policies to use vulnerability assessments and historic monitoring results to better determine appropriate monitoring schedules for PWSSs.

WDNR piloted a draft revised monitoring waiver program in 2013 and will provide an opportunity for EPA review and public comment by November 30, 2013.



WaterRF Subscriber	Utility	\$ Contribution	Share Existing Data	Provide disinfection and turbidity data from TCR sites	Monitor with a PRS Monitoring Station	Perform UDF	Use biofilm-removing chemical	Attempt to lower PO4	Participate in 6 meetings	TOTAL	Comments
x	North Shore Water Commission	\$12,500	\$800	\$800	\$19,500	\$15,000		\$0	\$200	\$48,800	
x	Kenosha Water Utility	\$12,500	\$800	\$800	\$12,500			\$0	\$200	\$26,800	Already owns PRS Monitoring Station
x	Green Bay Water Utility	\$12,500	\$800	\$800	\$16,000	\$15,000			\$200	\$45,300	Trying to prevent from having to use PO4
x	Milwaukee Water Works	\$0	\$3,000	\$800					\$200	\$4,000	
	WI DOA Utility 1	\$12,500	\$800	\$800	\$16,000	\$10,000	x	\$0	\$200	\$40,300	
	WI DOA Utility 2		\$800	\$800	\$12,500	\$10,000	x			\$24,100	Already owns PRS Monitoring Station
	WI DOA Utility 3		\$800	\$800	\$16,000	\$10,000	x			\$27,600	
	Mosinee Water Utility	\$12,500	\$800	\$800	\$16,000	\$15,000	x		\$200	\$45,300	
	Marshfield Utilities	\$0	\$800	\$800					\$200	\$1,800	Already have studied this system with PRS MS
	Onalaska Water Utility	\$0	\$800	\$800					\$200	\$1,800	Already have studied this system with PRS MS
	Cudahy Water Utility	\$0	\$800	\$800					\$200	\$1,800	
	Water Environment Research Foundation	\$50,000								\$50,000	
	Water Research Foundation	\$100,000								\$100,000	
	<b>Total</b>	<b>\$212,500</b>	<b>\$11,000</b>	<b>\$8,800</b>	<b>\$108,500</b>	<b>\$75,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$1,800</b>	<b>\$417,600</b>	

Lead and Copper Control with Possible Minimization of Phosphate-Based Corrosion Control Chemicals (proposal to WaterRF)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5  
77 WEST JACKSON BOULEVARD  
CHICAGO, IL 60604-3590

NOV 19 2013

REPLY TO THE ATTENTION OF:

WG-15J

Dave McMillan, Manager  
Division of Public Water Supplies  
Illinois Environmental Protection Agency  
P.O. Box 19276  
Springfield, Illinois 62794-9276

Re: Sample volume for Lead and Copper Rule (LCR) Compliance Samples

Dear Mr. McMillan:

This letter is being sent in response to an implementation issue presented to Region 5 by Illinois Environmental Protection Agency (IEPA), regarding invalidation of LCR compliance samples by laboratories for insufficient sample volume. The LCR regulatory language specifies that 'one-liter' samples must be collected for all compliance samples.

Unlike compliance samples collected for other rules, sample collection under the LCR is primarily conducted by residents of the public water system. Despite sampling instructions provided to the residents by public water systems, EPA recognizes that residents may not fully appreciate the importance of the sample volume requirements. Consequently, some laboratories receive resident-collected samples that are not one full liter in volume.

As explained in the proposed and final rule preambles, the sample volume can have an important effect on the measured lead and copper levels. The proposed rule solicited comment on whether 1 liter or 500 ml should be used. In the final rule preamble, EPA explains the decision to require one liter samples as being more representative of a larger portion of the household plumbing which provides a better indication of whether corrosion control is more generally effective as compared to 500 mL samples. EPA's intent that compliance samples should be 1000 mL in volume is also indicated in the final rule preamble text:

*"EPA also recognizes that the samples in Seattle were not collected exactly as the sampling protocol in the final rule. The final rule requires a 1000 ml first-draw sample, and Seattle used the first 250 ml for microbacterial analyses and the next 1000 ml for lead analysis."*

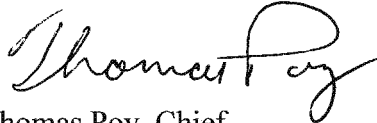
The preamble goes on to explain that a 1 liter sample volume provides a better representation of typical drinking water consumption for an individual and a more accurate portrayal of an individuals' exposure to lead and copper in drinking water.

Premise plumbing diameters can vary from ½ inch to 1 inch and consequently the extent of the plumbing that is characterized by the water sample will also be variable. A one-liter sample in the mid-range for pipe diameter will capture water that has stagnated within roughly 10 feet of pipe. It would be impractical to assess exact volumes and linear footage, but if we assume that a sample that is within 10 percent of the required volume would increase or decrease the average length of plumbing being characterized by roughly one foot, a sample that is within 10 percent of the required 1000mL should reasonably be expected to adequately characterize lead levels within the premise plumbing.

Given the stated intent in the proposed and final rule preambles, residents should continue to be instructed to collect samples that are 1 liter in volume and States and laboratories should use reasonable discretion in accepting or rejecting samples based on insufficient volume.

If you have any questions on this issue, please contact Miguel Del Toral of my staff at (312) 886-5253, or [deltoral.miguel@epa.gov](mailto:deltoral.miguel@epa.gov)

Sincerely,

A handwritten signature in cursive script, appearing to read "Thomas Poy".

Thomas Poy, Chief  
Ground Water and Drinking Water Branch

cc: [State Directors]  
Mike Crumly, IEPA  
Jeri Long, IEPA

### **Supporting Information for Internal Review Only**

**Issue:** An issue has been raised regarding what constitutes 'one-liter' in terms of the actual volume that can be accepted as a compliance sample under the Lead and Copper Rule (LCR).

**Background:** The LCR regulatory language specifies that 'one-liter' samples must be collected for all compliance samples. Typically, the use of a word rather than a number is more appropriate to convey entities which can be discretely counted using integers, such as one car or three persons. Measurements, calculations or specifications of physical quantities, such as lengths, distances or volumes, should be expressed as numbers.

The use of 'one-liter' rather than 1 liter or 1.0 liter, has raised the issue of what the volume must be in order to be considered an acceptable compliance sample. Specifically, would samples that are 0.5 L, 0.9 L, 1.1 L or 1.49L be valid and acceptable 'one-liter' samples?

### **Proposed LCR preamble (pages 31554-31555)**

"Sample volume also has an important effect on lead and copper levels in standing samples. The first 100 milliliters or so can have high levels from leaching lead out of faucets because lead is used in the manufacture of brass and bronze, which are often used in faucets and fittings. The next 400-500 milliliters represent water standing in the pipes near the faucet, and also may have high lead levels because of the numerous lead soldered joints that can lead up to the faucet (Lassovszky, 1984). Taking a one-liter sample represents less extreme lead levels than those generally found in a smaller sample because the initial high concentrations will be diluted by the later part of the sample, which contains lower concentrations. Because of the variation in lead levels with sample volume, EPA is proposing one liter as the standard sample volume for all samples."

"Although nearly all the data provided to EPA by systems has been collected from one-liter samples, the question of the cost of shipping one-liter bottles to the laboratory has been raised to EPA. One approach to reduce the weight and bulk would be to collect 500-ml samples instead. However, 500-ml samples will generally show a higher proportion of lead concentration from the faucet and a lower proportion from far and nearby lead soldered joints, than will 1 liter samples."

"However, because it is unlikely that an individual would consume an entire liter of water represented by a standing sample, EPA requests comment on an alternative sample volume of 500 ml. This alternative may better reflect a typical exposure. EPA estimates that 500 ml samples will show consistently higher concentrations of lead and copper than 1 liter samples, thus increasing the relative protectiveness of the proposed rules. An alternative approach to lower the weight would be to collect one-liter samples and transfer a 500-ml aliquot to another bottle for shipment and analysis. The Agency is reluctant to adopt this approach because lead adheres to containers very easily. This increases the probability of sampling error and would likely show a consistent, unacceptable downward bias. The Agency solicits comment on this potential problem and possible approaches for minimizing it."

## **Final LCR Preamble (page 26484)**

“EPA also recognizes that the samples in Seattle were not collected exactly as the sampling protocol in the final rule. The final rule requires a 1000 ml first-draw sample, and Seattle used the first 250 ml for microbacterial analyses and the next 1000 ml for lead analysis.”

## **Final LCR preamble (pages 26520 – 26521)**

“The proposed rule solicited comment on whether 1 liter or 500 ml was the appropriate sample volume. In addition, the proposal requested comment on an alternative approach of collecting a 1 liter sample and then transferring the sample to a 500 ml bottle for shipment and analysis. Many commenters supported the 1 liter volume requirement, stating that it provides a better characterization of the home plumbing system, including the faucet, and because the health effects data are based on a 1 liter daily consumption by a child. Others supported reducing the sample size to 500 ml to alleviate problems both in the distribution and pickup of samples.

“Others supported the alternative of collecting a 1 liter tap sample but shipping a 500 ml or 125 ml sample for analysis to decrease the shipping and laboratory storage costs. Others, suggested collecting a 125 ml sample to obtain data on lead leaching of faucets, followed immediately by a 1 liter sample. EPA decided to retain the 1 liter sample volume because compared to a 125 or 500 ml sample, a 1 liter sample volume provides a better representation of typical drinking water consumption for an individual and a more accurate portrayal of an individual's exposure to lead and copper in drinking water. Also, a 1 liter sample represents the lead and copper contribution from not only the faucet but also from the interior plumbing of the home. This is important when evaluating the effectiveness of corrosion control because a smaller water volume would only be representative of a small portion of the household plumbing and would not indicate if corrosion control treatment was more generally effective. EPA decided not to require a 125 ml sample followed by a 1 liter sample because of concern with the added burden of collecting another sample without any demonstrated benefits. EPA decided not to allow the alternative of collecting a 1 liter sample and transferring it to a 500 ml bottle for shipment and analysis because of continued concern with lead adhering to containers and because of potential problems with errors when transferring the sample to a smaller bottle.”

## **LCR Final Rule Language**

### ***141.2 Definitions***

First draw sample, means a one-liter sample of tap water, collected in accordance with §141.86(b)(2), that has been standing in plumbing pipes at least 6 hours and is collected without flushing the tap.

### ***141.86 (b) Sample collection methods.***

- (1) All tap samples for lead and copper collected in accordance with this subpart, with the exception of lead service line samples collected under § 141.84(c), shall be first draw samples.
- (2) Each first-draw tap sample for lead and copper shall be one liter in volume and have stood motionless in the plumbing system of each sampling site for at least six hours.

FY2013 WI DNR PUBLIC WATER SYSTEM SUPERVISION PROGRAM  
WORK PLAN SUMMARY

October 1, 2012, through September 30, 2013

*Reported as of 7/11/13*

**Contacts:**

- WI DNR Public Water Supply Section Chief – Steve Elmore, Steve.Elmore@wisconsin.gov, (608) 264-9246
- U.S. EPA Region 5 (R5) WI State Program Manager – Joe Janczy, [ [HYPERLINK "mailto:Janczy.Joseph@epa.gov"](mailto:Janczy.Joseph@epa.gov) ], (608) 267-2763

**Federal funding used:** PWSS grant; Drinking Water State Revolving Fund (DWSRF) State program management, local assistance (for capacity development and wellhead protection), and small system technical assistance set-asides; Operator Certification Expense Reimbursement grant; and Clean Water Act Section 106 funds (ground water)

NOTE: Click on the links below for summaries and more detailed information about WI's implementation of the national primary drinking water regulations (NPDWRs) or any of the activities below.

1. [ [HYPERLINK](https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015BBF6.nsf?OpenDatabase)

"https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015BBF6.nsf?OpenDatabase"] – WI DNR is implementing all of the drinking water rules, except where noted as discrepancies in the linked table. WI DNR does not have primacy for FBRR, LT2SWTR, GWR, LCRSTR, Stage 2 D/DBPR, and V & E, but has submitted them to R5 for primacy. R5 completed review of GWR and LCRSTR and corresponded with WDNR about necessary revisions. R5 continues primacy review for the other rules. R5 tracks state reporting of new rule violations (LT2SWTR, GWR, LCR, and Stage 2 D/DBPR). As of April 2013, WI DNR reported:

- No LT2 violations
- 281 GWR source water M/R violations
- 30 Stage 2 M/R violations
- 443 LCRSTR consumer notification M/R violations

Region agrees to provide primacy findings for Stage 2, LT2, FBRR, V & E, and other minor revisions ("the crumbs") to WDNR by January 1, 2014 so that they can be incorporated into state code revisions that will include RTCR.

WI DNR BDWGW is discussing RTCR implementation strategies with its statewide management team, and will update Miguel Del Toral as the path chosen for implementation becomes clearer.

2. [ [HYPERLINK](https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C700157D04.nsf?OpenDatabase)

"https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C700157D04.nsf?OpenDatabase"] – WI DNR maintains staff with the technical expertise needed to perform sanitary surveys. WI DNR ensures that sanitary surveys are conducted periodically that, in the vast majority of cases, meet frequency requirements specified by rule. For TNs in contracted counties, WI DNR must manage and continue to evaluate the performance of sanitary surveys conducted by county health departments by reviewing the extent to which significant deficiencies are being identified, and whether frequency requirements are being met.

R5 tracks state commitments to conduct sanitary surveys within the federally required intervals. As of April 2013:

- SURFACE WATER SYSTEMS: 100% (56/56) of the sanitary surveys at Subpart H systems were completed between 2010 and 2012.
- GROUND WATER SYSTEMS: 97.9% (973/994) of CWSs were completed between 2010 and 2012. 99.6% (779/782) of NTNCWSs and 99.6% (8822/8855) of TNCWSs were completed between 2008 and 2012.

Performance is solid. WI DNR has internal oversight procedures to review the quality of sanitary surveys performed by your contracted county health departments.

### 3. [HYPERLINK

"[https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70016055A.nsf/h\\_Toc/50a7a2f7c68b0990852579c7001671af/?OpenDocument](https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70016055A.nsf/h_Toc/50a7a2f7c68b0990852579c7001671af/?OpenDocument)"] — The state is meeting expectations because: (1) R 5 maintains certification for the Wisconsin State Laboratory of Hygiene (WSLH), (2) the program uses direct certification and reciprocal agreements to certify commercial labs within the state, and (3) a process for ensuring capacity to analyze at the principal state lab or commercial labs all NPDWR parameters that are required to be sampled in the state is maintained. Laboratory certification responsibilities in Wisconsin are split between the WI DNR (chems), and WI DATCP (micro). Potential areas of concern include certifying labs for cryptosporidium, radionuclide, and asbestos analysis.

R5 no longer certifies private labs for drinking water analysis. WI DNR will not commit resources to independently certify them either. Unless an agreement is reached to have some party handle certification, Wisconsin will only have one radionuclide certified laboratory by the end of 2014. Rita Bair will continue to work with Al Alwan and Alfredo Sotomayor to find an acceptable private lab certification approach for radionuclides and asbestos.

### 4. [HYPERLINK

"<https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015D26C.nsf?OpenDatabase>"] — WI DNR will ensure public water systems regain compliance with NPDWRs. R5 tracks state commitments under measure SDWA02 and updates WI DNR quarterly. WI DNR's 2012 commitment is to address or resolve 120 systems, and has met this commitment by addressing or resolving 135. For 2013, WI DNR commits to address or resolve 38 systems. WI DNR does not commit to follow-up on CCR, and LCR Consumer Notification violations. WI DNR does not commit to follow-up on PN violations originating from Tier 2 and 3 violations. R5 looks forward to discussing WI DNR reinvestment as program vacancies are filled.

WI DNR is exploring several reinvestments under different timelines as vacancies are filled. However, state and federal resource reductions could jeopardize them. Some of the WI DNR disinvestments are long standing and R5 needs to see progress made in closing these gaps. Our priority is for the WDNR to fully reinvest in LCR consumer notification violation follow-up. R5 will look into whether erroneously reported violations that are three-plus years old can be removed from SDWIS/FED.

### 5. [HYPERLINK

"<https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C700159C89.nsf?OpenDatabase>"] — WI DNR maintains a data management system that tracks

requirements for all rules and serves as the central store of data reported by laboratories, field offices and County Health Departments. WI DNR uses FedRep 3.2 , but needs to upgrade to 3.4, to report GWR TT violations to EPA. PWS Monthly Operating Report information is now being submitted, captured and stored electronically in DWS. WI DNR's reporting of TCR and nitrate violations continue to improve. In 2011, 99.6% of the TCR violations and 100% of the nitrate violations were reported on-time.

WI DNR will have the FedRep 3.4 upgrade complete for the November 2013 data submittal which will allow the exchange of GWR TT violation information to SDWIS/FED.

Security – As part of its primacy application, WDNR developed a plan for the provision of safe drinking water under emergency circumstances, including but not limited to, natural disasters. Preparedness for ensuring safe drinking water under emergency circumstances includes increasing security and resiliency of water utilities, and communities as a whole.

WDNR will hold a waste water and drinking water security summit as soon as practicable, given the need to replace the drinking water security contact position which is being vacated shortly. Region 5 is working with WI DHHS to develop an addendum to the state pandemic flu plan, or a short stand-alone document, which will reflect the critical life line functions of drinking water and waste water utilities in supporting a pandemic flu response, and the need for multiple agencies to provide support to the water sector to maintain essential functions. The region will include WDNR in the discussions with DHHS.

#### 7. [HYPERLINK

"<https://epa.qpx.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C700158EB5.nsf?OpenDatabase>"] —WI DNR established and maintains minimum professional standards for the operation and maintenance of all public water systems to ensure that skilled professionals are overseeing the treatment and distribution of safe drinking water and to promote compliance. WI DNR annually – by September 30<sup>th</sup> each year – provides documentation to EPA showing the ongoing implementation of the program to avoid 20% withholding of the DWSRF grant. On June 30, 2012, only 10 of the 1,919 WI systems required to have a certified operator did not have one. WI DNR improved its data system to revise exams more efficiently. It should update its study guide and exam questions to reflect new rule requirements.

R5 will clarify the DEI reporting requirements for Type 12 – lack of qualified operator violations, and WI DNR commits to begin reporting these violations in the future after higher priority SDWIS reporting gaps are filled.

#### 8. [HYPERLINK

"<https://epa.qpx.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C700158751.nsf?OpenDatabase>"] —WI DNR ensures that new and existing CWSs/NTNCWSs can demonstrate technical, managerial, and financial capacity to operate in compliance with federal and state regulations. WI DNR annually - by December 31<sup>st</sup> each year - provides documentation to R5 showing the ongoing implementation of both the new systems program and the existing systems strategy to avoid 20% withholding of the DWSRF capitalization grant. The annual report should address the new capacity development reporting measures. Some examples of the numerous activities taken by the WI DNR to strengthen system capacity in FFY 2012 include:



- Reviewed 648 water system engineering plans to provide an initial safeguard for new projects, like installing new wells, water treatment systems, well facilities, water mains, and developing wellhead protection plans.
- Launched a new version of the Mobile Sanitary Survey System software program for field use on tablet and laptop PCs.
- Enhanced consistency and improved data accuracy by launching a new internet based County Sanitary Survey System for contracted county staff who perform sanitary surveys and collect water samples at transient non-community water systems in 45 WI counties.

Region 5 wants to know when WI DNR will end the LCR consumer notification disinvestment. It was the stated reason why 35% of the new systems that became active in the last three years had active violations.

WI DNR continues to make enhancements to its sanitary survey program, which is used to develop the capacity of water systems.

9. [HYPERLINK

"<https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015F083.nsf?OpenDatabase>"] —WI DNR reports the number of CWSs with source water protection (SWP) plans and the number of CWSs implementing SWP measures (electronically via SDWIS, if possible) as of June 30 by August 15. WI DNR is meeting its 13% target to minimize risk at CWSs through source water protection for both CWSs and their population served. WI DNR will update source water assessments, as resources allow, especially in prioritized areas, and complete source water assessment reports for new public water systems. WI DNR recently modified its wellhead protection program to include a facilitated incentive approach for geographic target areas. WI DNR is facilitating actions with partners and stakeholders in two areas in Rock and Sauk Counties to field truth if measureable nitrate reductions in groundwater can be achieved and sustained cost effectively.

Approaches to measure groundwater nitrate reductions continue to be developed for portions of the Spring Green Prairie du Sac and Janesville well head protection areas. Local, regional and federal collaboration is occurring to develop these approaches. WI DNR BDWGW continues to make every effort to integrate relevant SDWA implementation efforts into priority setting for CWA programs.

10. [HYPERLINK

"<https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015F8CA.nsf?OpenDatabase>"] —There are multiple national measures in the national program manager guidance that support the “water safe to drink” subobjective 2.1.1 in EPA’s strategic plan, and R5 is also tracking several other measures, including those in the logic model reporting tool, regional shared goals, and regional high priority queries. The most recent data for Wisconsin for each of these measures are available via the “measures and indicators” link, some of which have been described above in this work plan summary.

11. Resources and expertise —WI DNR maintains a baseline core of individuals with the technical expertise to carry out all mandatory components of the PWSS Program (including engineering plan and specification review and emergency response) . In 2012, WI DNR had the

equivalent of nearly 73 full-time staff working with the 11,409 public water systems. Sixty-three percent of the 2012 PWSS program budget was federally funded.

Contracts with third parties conducting mandatory components of the PWSS Program will make performance expectations clear, and will be measured and evaluated by the Department. In 2012, sixteen percent of the budget went to contracts with associations, county health departments, and consultants.

WI DNR develops and implements a plan to provide adequate funding to carry out all functions of the PWSS program and has been recently successful at filling vacancies. R5 will want WI DNR to make progress in reinvesting to close acknowledged program discrepancies.

3.5 new positions will be deployed to support district offices. There is also additional management and IT support being provided to central office.

DRAFT

**LEAD AND COPPER CONTROL IN WATER DISTRIBUTION SYSTEMS  
BY REMOVAL OF CHEMICAL SCALES AND BIOFILMS WITH THE  
SUBSEQUENT ELIMINATION OR MINIMIZATION OF PHOSPHORUS-  
BASED CORROSION CONTROL CHEMICALS  
(PRE-PROPOSAL TO WATER RESEARCH FOUNDATION)**

**SPONSORING UTILITIES**

North Shore Water Utility (WI) with possible participation and sponsorship by:  
Milwaukee Water Works (WI)  
Green Bay Water Utility (WI)  
Kenosha Water Utility (WI)

In addition, a number of non-subscriber utilities may participate through other funding:  
Cudahy Water Utility (WI)  
Marshfield Water Utility (WI)  
Mosinee Water Utility (WI)  
Onalaska Water Utility (WI)  
State of Wisconsin-owned small system facilities (WI)

The main organizer of this project is:  
North Shore Water Commission  
Eric Kiefer, Manager  
400 West Bender Road  
Glendale, WI 53217  
(414) 963-0160  
EKiefer@northshorewc.com

**COORDINATING PROJECT INVESTIGATOR**

Abigail F. Cantor, P.E.  
Process Research Solutions, LLC  
PO Box 5593  
Madison, WI 53705  
(608) 233-3911  
acantor@processresearch.net

**FUNDING SUMMARY**

The budget has not been developed in detail, but Table 1 is the likely scenario.

**Total Cash Budget (WaterRF Funding + All Co-Funding Cash):** \$200,000

**Total In-Kind Budget:** This will be estimated for the final proposal. See Table 1.

**Total Project Budget (Cash + In-kind):**

This number is unknown at this time. However, it is evident from Table 1 that utilities will be greatly invested in this project by purchasing monitoring stations, providing the labor to follow monitoring protocols, and preparing and carrying out uni-directional flushing.

**Will all cash funding be received by the WaterRF?** Yes

**Table 1. Preliminary Funding Summary**

<b>Organization Name</b>	<b>Cash Co-funding</b>	<b>In-kind</b>	<b>Expected Final Approval Date</b>	<b>WaterRF will match cash funding?</b>	<b>Expiration date of funds?</b>
Collectively from subscriber utilities listed under Sponsoring Utilities	\$50,000	All utilities will purchase special monitoring stations for distribution system monitoring, pay for the labor to perform distribution system monitoring per protocols in this project and will pay additional money and labor to clean the distribution system with a properly engineered uni-directional flushing program.	All water utilities are to agree to participation in the project for the final proposal which is intended to be completed by Dec. 1, 2013	Yes	This project will run for 24 months from contract signing to submittal of the final report. The actual monitoring period for the water systems will be 16 months.
Water Environment Research Foundation	\$50,000	na	WERF will evaluate this proposal in December and commit to funding at that time.		
Total funds eligible for 1:1 WaterRF match	\$100,000				
Total funds not eligible for match	\$0				

# **LEAD AND COPPER CONTROL IN WATER DISTRIBUTION SYSTEMS BY REMOVAL OF CHEMICAL SCALES AND BIOFILMS WITH THE SUBSEQUENT ELIMINATION OR MINIMIZATION OF PHOSPHORUS- BASED CORROSION CONTROL CHEMICALS (PRE-PROPOSAL TO WATER RESEARCH FOUNDATION)**

## **PROBLEM IDENTIFICATION**

The Lead and Copper Rule is based on the assumption that the only significant factor influencing the transfer of lead and copper from piping components is uniform corrosion of metals. However, it has been found that besides the solubility of uniform corrosion by-products, there are two major groups of factors in water distribution systems that are equally or even more significantly influential on the transfer and transport of lead and copper to consumers' taps (Cantor 2009; Cantor 2011). One group of factors involves chemical scales that have built-up on the pipe walls of the water distribution system and premise plumbing. These are scales, such as iron, manganese, and aluminum, which can sorb and accumulate lead and copper and other metals and then reintroduce the metals at higher accumulated concentrations to the water as the scale crumbles or dissolves (Schock 2005; McFadden et al, 2009; Lytle et al, 2010; McFadden et al, 2011; Schock et al 2013). The other group of factors involve microbiologically influenced corrosion from high microbiological activity in the water and biofilms on the pipe walls (Bremer, Webster, & Wells 2001; Cantor, Bushman, & Glodoski 2003; Cantor 2009; Cantor 2011).

Because the Lead and Copper Rule focuses solely on creating insoluble by-products of uniform corrosion, the use of phosphate-based corrosion chemicals in water systems that can form such a barrier to uniform corrosion is encouraged and other lead and copper control solutions are overlooked. The problems that arise from the use of the phosphate chemicals are as follows:

- The chemical may be irrelevant to eliminating the factors that transfer the lead and copper to the water in an individual water system and therefore a waste of money. Inadequate distribution system monitoring and subsequent misunderstanding of water system factors allow the use of the chemical to continue.
- The phosphorus added to the distribution system in the chemical can act as a nutrient for the growth of microorganisms, ironically causing increasing microbiologically influenced corrosion with a subsequent increase in the lead, copper and iron transferred to the water.
- Polyphosphate chemicals are often confused with orthophosphate chemicals for corrosion control needs. But, polyphosphate chemically pulls and holds metals in the water instead of suppressing their transfer from the pipes.
- Drinking water used for landscape can flow directly to natural waters. The added phosphorus can act as a nutrient in natural water for the growth of microorganisms, algae, etc.
- Drinking water used for industrial contact cooling water is released directly to natural water bodies where the phosphorus concentration can act as a nutrient for the growth of microorganisms, algae, etc. With more stringent Clean Water Act phosphorus discharge limits, the industries will be required to remove the phosphorus before discharge, an action which can be cost prohibitive.
- Drinking water that goes down a drain into a sanitary sewer carries a concentration of phosphorus which the wastewater treatment plant is required to remove to stringent Clean

Water Act levels before discharge to natural bodies of water. The cost of phosphorus removal becomes high enough that it is more cost effective to prevent the use of phosphorus and to lower the wastewater treatment plant phosphorus influent concentration than to install phosphorus removal processes.

## **STATEMENT OF RESEARCH NEED**

There is a need to demonstrate that most clean and microbiologically-stable water distribution systems do not need orthophosphate or any corrosion control chemical for lead and copper control and Lead and Copper Rule compliance. If it is found that orthophosphate is still needed for lead and copper control in some systems, it should be demonstrated how the dosage can be set to a minimum level.

Cost, water quality, and environmental benefits can then be shown for both the water utility and the receiving wastewater utility.

This project benefits all water utilities in clarifying how to control lead and copper. The project benefits industries with non-contact cooling water and wastewater utilities in relieving the burden of removing the phosphorus added by water utilities. This project is also relevant to the current re-writing of The Lead and Copper Rule where the use of orthophosphate as a “best available technology” for corrosion control is still being debated.

## **PRELIMINARY PROJECT ABSTRACT**

### **Hypothesis**

Clean and microbiologically-stable water distribution systems can optimize lead and copper corrosion control while minimizing or eliminating the use of orthophosphate and other corrosion control chemicals.

Financial, water quality, and environmental benefits of lowering or eliminating the orthophosphate dosage can be found for both the drinking water and the wastewater utilities.

### **Research Objectives**

This project will encompass up to ten water systems varying in population served from several hundred people to over 600,000. Both surface water and groundwater systems are involved.

The water systems will be taken through tracking of the lead and copper trends in the existing water systems by means of established monitoring protocols using special distribution system monitoring stations (Cantor 2009; Cantor et al 2012). The monitoring will continue through distribution system cleaning and finally through and beyond the lowering of any phosphate-based corrosion control chemical. The monitoring station lead and copper data will determine how low the phosphate dose can go.

While lowering the established phosphate dose is the ultimate objective for most of the participating utilities, it is unlikely that larger systems will be able to clean their entire systems over the duration of this project. For these systems, the emphasis of the project will be in demonstrating the effectiveness of unidirectional flushing and disinfection on lead and copper control.

Throughout the project, the phosphorus concentrations will be tracked from the initial drinking water dose to the discharge from the wastewater treatment plant in a rough mass balance of phosphorus.

In addition, the financial and environmental costs of distribution system cleaning versus phosphate-based corrosion control chemical use will be assessed from both the drinking water utility and the wastewater utility perspectives.

## **Technical Approach**

### ***Primary Tasks***

The project tasks in this project are to:

- Track the lead, copper, microbiological activity, and turbidity trends (as well as other water quality parameters relevant to the water systems) in the existing water systems by means of data from an established distribution system monitoring approach (Cantor 2009; Cantor et al 2012)
- Continue the monitoring as each water system is cleaned by means of uni-directional flushing with optional aid of low doses of NSF-approved biofilm-removing chemicals.
- After cleaning, continue monitoring and quantify how lead and copper levels are affected over the remainder of the project.
- Phosphate dose may be lowered very slowly according to the objectives of individual utilities. The monitoring station lead and copper data will determine to how low the phosphate dose can go.
- Develop a rough mass balance of phosphorus from the drinking water system through the wastewater treatment plant.
- Develop financial and environmental costs of distribution system cleaning versus phosphate-based corrosion control chemical use, incorporating costs from both the drinking water utility and the wastewater utility.

### ***Measurements and Evaluations***

In the distribution system monitoring efforts, parameters of uniform corrosion by-product formation, chemical scale formation, and water biostability will be gathered according to established protocols of distribution system monitoring and investigation (Cantor 2009; Cantor et al 2012).

Within the above parameters, total phosphorus and orthophosphate concentrations will be collected both in the drinking water system and at the influent and discharge of the associated wastewater treatment plant.

The special distribution system monitoring stations will provide stagnating water samples for total and dissolved lead and copper analysis as a surrogate to residential sampling (Cantor 2009; Cantor et al 2012). In addition, the lead and copper plates that form the internals of the monitoring station test chambers will be analyzed for chemical scales and biofilms at the end of the monitoring period.

### ***Method of Data Collection***

The method of data collection is established and explained elsewhere (Cantor 2009; Cantor et al 2012). The technique has been used since 2006 with preliminary steps to this technique established in 1997 (Cantor et al 2000). The technique includes three tools: a special monitoring strategy, the PRS Monitoring Station, and Shewhart Control Charts for data analysis.

Water samples will be analyzed as approved by EPA in the drinking water regulations using drinking-water-certified laboratories and field measurement methods. The field

measurements will undergo quality control for accuracy and precision using measurements of standard solutions and duplicate measurements of samples (Cantor et al 2012).

### ***Locations of Data Collection***

Locations of distribution system measurements will be at the entry points to the distribution system and at critical high water age locations in the distribution system. In addition, established Total Coliform Rule sites around the distribution system will be used for routine collection and study of disinfection concentrations as well as turbidity.

The influent to and the discharge from the wastewater treatment plant will also be monitored in coordination with the associated wastewater utilities. This may involve additional monitoring at a location representing the wastewater contribution of the specific water system.

### ***Project Personnel and Roles***

Monitoring protocols will be provided by Process Research Solutions to the participating water systems. Each water system will use its personnel to gather the weekly field data and laboratory water samples. Field data in a special spreadsheet will be sent to Process Research Solutions weekly by water utility personnel. At Process Research Solutions, data will be automatically transferred to a database and graphs automatically produced. Interpretation of data and decisions made based on data will be subject to approval by personnel at the regulatory agency, the Wisconsin Department of Natural Resources.

### ***Project Schedule***

<b>Month Number in Project</b>	<b>Activity</b>
1	Sign contract; PAC meeting; begin preparation for water distribution system monitoring
3	Begin distribution system and wastewater system monitoring
7	Begin distribution system cleaning
11	Begin phosphate chemical reduction, if relevant in a system
15	Continue monitoring to establish final lead and copper trends, etc.
19	Analyze internal plates from the monitoring stations; begin report writing
22	Complete draft report
24	Complete final report

### **STATEMENT OF QUALIFICATIONS**

This project will be led by Abigail F. Cantor, P.E. of Process Research Solutions, LLC. Since 1997, her professional work has focused on water quality investigations, Lead and Copper Rule compliance, and developing a pro-active approach to drinking water quality. To this end, she has developed tools for monitoring and investigation that have been found effective in water utilities around the country.

The final proposal will identify the water and wastewater utility managers and personnel who will carry out the monitoring efforts as well as the laboratories for water and metal plate scale analysis and participating regulators.



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## APPENDIX A. PRE-PROPOSAL CHECKLIST

Along with this pre-proposal, an email has been sent to the Water Research Foundation subscriber participants in this project stating the following:

In order to complete the distribution system project proposal for the Water Research Foundation and the Water Environment Research Foundation by December 1, 2013, each Water Research Foundation subscriber that intends to participate in this project needs to:

- Review the Pre-proposal Checklist attached to this email that was sent to Water Research Foundation with this pre-proposal.
- Read the Tailored Collaboration Multi-Funding Agreement attached to this email. The document can also be found at:  
<http://www.waterrf.org/funding/ContractMaterials/MultiFundedResearchAgreement.pdf>
- Have your legal department read and comment on or approve the Agreement.
- Realize that the water utility must pay the WaterRF the initial co-funded amount at the beginning of the project. The details of the budget for this project have not been established yet but the cash contribution per water utility will be \$10,000 to \$30,000. This money is initially sent to WaterRF and is then used to pay for laboratory analyses and engineering tasks throughout the project.
- Determine if a purchase order is required to pay WaterRF the initial co-funding amount.
- Determine the person in your organization who has signature authority to commit funding and to sign legal documents for this project.

## Attachment 2: Pre-proposal Checklist

Please check-mark the points below to acknowledge you are aware of this point. If you have any questions, the Sr. Account Manager for your area will help you with the answer, or will put you in contact with the correct person who can help you.

- ☒ Guidelines. The person submitting this pre-proposal, called the proposer below, read the guidelines for the Water Research Foundation Tailored Collaboration program posted on the WaterRF website (<http://www.waterrf.org/funding/Pages/proposal-guidelines.aspx>).

### Financial -

- ☒ All co-funding organizations are identified on the Pre-proposal Cover Sheet.
- ☒ WaterRF funding. I realize that WaterRF will provides 1:1 matching up to \$100,000 cash for all funds provided by fully subscribing utilities if the full proposal is accepted for funding.
- in email to participants* ☒ Purchase orders. Each cash co-funder has been asked if they need a purchase order to pay WaterRF the initial co-funding amount.
- ☒ Timing of payment from co-funders. All co-funding is due to be paid to WaterRF at the beginning of the project to make sure WaterRF can meet their contractual obligation to pay for the entire project as work is completed.
- ☒ Initial payment to researcher. All co-funding needs to be received by WaterRF before the 10% project advance will be paid to the Sub-recipient (the researcher who is getting paid to do the work). No invoice will be required from the researcher to obtain the 10% project advance.

### Contractual -

- ☒ Proposer will provide A W-9 to draft the contract; this has the legal entity name, legal address.
- in email to participants* ☐ Signature authority –Proposer will provide the name(s) of the individual with signature authority for each organization providing cash. This person needs to be identified and listed in the proposal paperwork. Please note - technical participants may not necessarily have signature authority to commit funding or sign legal documents on the organization's behalf.
- ☐ Agreement signed by all cash contributors. All utilities and other organizations providing cash to WaterRF that will be used towards the project are aware that they will need to sign the same mutually agreed to Multi Funded Research Agreement (MFRA).
- ☐ Draft WaterRF Contract is on website. Proposer is aware that if the project is funded by the Water Research Foundation, a draft template version of the contract that will be used for all parties is available on the WaterRF website. This contract is called the Tailored Collaboration Multi-Funding Agreement (MFRA), please

see link provided below.

<http://www.waterrf.org/funding/ContractMaterials/MultiFundedResearchAgreement.pdf>

- ☐ Legal review. Proposor has provided the MFRA template to their legal and contract staff's attention to review prior to project award. WaterRF recommends legal review of this document to avoid any contractual roadblocks.
- ☒ Intellectual property is jointly owned by WaterRF, the co-funders of the research, and the researcher.
- ☒ Copyright for the report is owned by WaterRF and a license to use the information will be granted to other parties including the researcher.
- ☒ Timeframe – Proposor understands the timeline expectations below. Please let the cash co-funders know this information so that delays can be avoided.
  - Draft contract with all participating cash co-funder's information will be emailed to all participants after the project award has been approved and upon receipt of all required proposal documents.
  - Proposers will have 10 calendar days to review and respond back to the WaterRF's Contract Manager with requested revisions.
  - Review of requested revisions by WaterRF Contract Manager. Negotiation period begins in good faith and typically all reasonable requests can be approved. WaterRF's Contract Manager will keep all participants apprised if negotiation period delays project.
  - Final contract emailed to all parties for final execution upon completion of negotiations with all participants. This final agreement will include all contract exhibits including but not limited to proposal, budget, proposal cover sheet, and contract deliverable schedule. All parties will have 10 calendar days to sign and return signature page of the final agreement back to WaterRF's Contract Manager.
  - The total contracting process from draft contract to final contract execution should take no longer than 45 calendar days

FY2014 WI DNR PUBLIC WATER SYSTEM SUPERVISION PROGRAM  
WORK PLAN SUMMARY  
October 1, 2013, through September 30, 2014

Detailed information about the implementation of drinking water and groundwater programs in Wisconsin is shared between WI DNR and USEPA Region 5 (R5) on a *Lotus Quickr* collaborative internet site called *Region 5 State PWSS Programs*. For additional information that is provided on the site, please contact Joe Janczy.

**Contacts:**

- WI DNR Public Water Supply Section Chief – Steve Elmore,  
Steve.Elmore@wisconsin.gov, (608) 264-9246
- R5 WI State Program Manager – Joe Janczy,  
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The Public Water System Supervision Program (PWSS) is authorized by the Safe Drinking Water Act (SDWA). SDWA regulatory requirements for public water systems (PWS) are implemented through the PWSS program. The ultimate goal of the program is the protection of human health via safe water from PWSs. The program achieves this goal when:

- A. PWSs remain in compliance, or take corrective actions to return to compliance with rules that are at least as stringent as the National Primary Drinking Water Regulations.
- B. PWSs maintain adequate technical, financial, and managerial capacity to provide safe drinking water.

Except for PWSs on tribal lands, EPA delegates the authority to implement the PWSS program in Wisconsin to the State, funds and coordinates implementation with the WI DNR, and oversees implementation. Expected programmatic outputs from WI DNR are to:

- Prevent risk to human health through periodic sanitary surveys
- Inform PWSs of non-compliance, or potential for non-compliance
- Use formal enforcement when necessary to regain PWS compliance
- Ensure that drinking water infrastructure projects meet AWWA and 10 states standards
- Ensure that PWSs have properly certified operators
- Maintain a data system that is capable of accepting compliance and other program data
- Report required data to EPA and implement a recordkeeping system, the cornerstone of which is the Drinking Water System Database.

**Federal funding used:** PWSS grant; Drinking Water State Revolving Fund (DWSRF) State program management, local assistance (for capacity development and wellhead protection), and small system technical assistance set-asides; and Clean Water Act Section 106 funds (ground water)

1. [\[HYPERLINK](https://epa.qpx.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015BBF6.nsf?OpenDatabase)

"<https://epa.qpx.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015BBF6.nsf?OpenDatabase>"] — WI DNR implements all of the drinking water rules, except for

remaining disinvestments noted in Attachment A. WI DNR does not have primacy for FBRR, LT2SWTR, GWR, LCRSTR, Stage 2 D/DBPR, and V & E, but has submitted applications to R5 for primacy review, and is implementing them. R5 completed review of GWR and LCRSTR and corresponded with WDNR about necessary revisions. R5 agrees to provide WI DNR with correspondence on necessary revisions to FBRR, LT2SWTR, Stage 2 D/DBPR and V & E by December 31, 2013. R5 tracks state reporting of new rule violations (LT2SWTR, GWR, LCR, and Stage 2 D/DBPR). As of April 2013, WI DNR reported:

- No LT2 violations
- 281 GWR source water M/R violations
- 30 Stage 2 M/R violations
- 443 LCRSTR consumer notification M/R violations

Requested improvements – Make all agreed upon changes to the Wisconsin Administrative Code and to internal policies and procedures, in accordance with findings from primacy application reviews. Ensure that PWSs and WI DNR are complying with the requirements of the RTCR by April 1, 2016.

## 2. [HYPERLINK

"<https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C700157D04.nsf?OpenDatabase>"] – WI DNR maintains staff with the technical expertise needed to perform sanitary surveys. WI DNR ensures that sanitary surveys are conducted periodically that, in the vast majority of cases, meet frequency and quality requirements specified by rule as measured under OW NPM Guidance Measure SDW-1a. For TNs in contracted counties, WI DNR oversees contracted public health departments, conducts annual training for contracted staff, ensures sanitary survey quality by reviewing completed survey reports and shadowing new contracted staff on some surveys, maintaining an online sanitary survey reporting system, and tracks frequency of surveys with the drinking water system database and quarterly management reports. R5 tracks state commitments to conduct sanitary surveys within the federally required intervals. As of April 2013:

- SURFACE WATER SYSTEMS: 100% (56/56) of the sanitary surveys at Subpart H systems were completed between 2010 and 2012.
- GROUND WATER SYSTEMS: 97.9% (973/994) of CWSs were completed between 2010 and 2012. 99.6% (779/782) of NTNCWSs and 99.6% (8822/8855) of TNCWSs were completed between 2008 and 2012.

## 3. [HYPERLINK

"[https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70016055A.nsf/h\\_Toc/50a7a2f7c68b0990852579c7001671af/?OpenDocument](https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70016055A.nsf/h_Toc/50a7a2f7c68b0990852579c7001671af/?OpenDocument)"] – The state is meeting expectations because: (1) R 5 maintains certification for the Wisconsin State Laboratory of Hygiene (WSLH), (2) the program uses direct certification and reciprocal agreements to certify commercial labs within the state, and (3) a process for ensuring capacity to analyze at the principal state lab or commercial labs all NPDWR parameters that are required to be sampled in the state is maintained. Laboratory certification responsibilities in Wisconsin are split between the WI DNR (chems), and WI DATCP (micro). Potential future areas of concern include certifying labs for radionuclide and asbestos analysis.

Requested improvement – Certify labs for radionuclide and asbestos SDWA approved methods.

4. [HYPERLINK

"<https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015D26C.nsf?OpenDatabase>"]—WI DNR will ensure public water systems regain compliance with NPDWRs. R5 tracks state commitments under OECA measure 5.1.3 (SDWA02) and updates WI DNR quarterly. WI DNR's 2013 commitment is to address or resolve 38 systems. For 2014, WI DNR commits to address or resolve 51 systems. WI DNR will review follow-up on CCR, and LCR Consumer Notification violations or to follow-up on PN violations originating from Tier 2 and 3 violations and develop a management approach during FFY 2014.

Requested improvement – Follow-up on all consumer notification, consumer confidence report and public notification violations.

5. [HYPERLINK

"<https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C700159C89.nsf?OpenDatabase>"]— WI DNR maintains a data management system that tracks requirements for all rules and serves as the central store of data reported by laboratories, field offices and County Health Departments. WI DNR commits to upgrade to FedRep 3.4 by November 15, 2013, so that all GWR TT violations and associated significant deficiency corrective action information is provided correctly to EPA by February 15, 2014. PWS Monthly Operating Report information is now being submitted, captured and stored electronically in DWS. This data will eventually be used to automatically determine compliance with SWTRs. WI DNR's reporting of TCR and nitrate violations continue to improve. In 2012, 99.6% of the TCR violations and 100% of the nitrate violations were reported on-time.

Requested improvement – Upgrade to FedRep 3.4. Report TT violations and associated significant deficiency corrective action information to EPA.

Security – As part of its primacy application, WDNR developed a plan for the provision of safe drinking water under emergency circumstances, including but not limited to, natural disasters. Preparedness for ensuring safe drinking water under emergency circumstances includes increasing security and resiliency of water utilities, and communities as a whole.

7. [HYPERLINK

"<https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C700158EB5.nsf?OpenDatabase>"] —WI DNR established and maintains minimum professional standards for the operation and maintenance of all public water systems to ensure that skilled professionals are overseeing the treatment and distribution of safe drinking water and to promote compliance. WI DNR provides – by September 30<sup>th</sup> each year – documentation to EPA showing the ongoing implementation of the program to avoid 20% withholding of the DWSRF grant. On June 30, 2012, only 10 of the 1,919 WI systems required to have a certified operator did not have one. WI DNR improved its data system to revise exams more efficiently. WI DNR has updated its study guide and exam questions to reflect new rule requirements.

8. [HYPERLINK

"<https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C700158751.nsf?OpenDatabase>"] —WI DNR ensures that new and existing CWSs/NTNCWSs can demonstrate technical, managerial, and financial capacity to operate in compliance with federal and state regulations. WI DNR annually - by December 31<sup>st</sup> each year - provides documentation

to R5 showing the ongoing implementation of both the new systems program and the existing systems strategy to avoid 20% withholding of the DWSRF capitalization grant. The annual report should address the new capacity development reporting measures. Some examples of the numerous activities taken by the WI DNR to strengthen system capacity in FFY 2012 include:

- Reviewed 648 water system engineering plans to provide an initial safeguard for new projects, like installing new wells, water treatment systems, well facilities, water mains, and developing wellhead protection plans.
- Launched a new version of the Mobile Sanitary Survey System software program for field use on tablet and laptop PCs.
- Enhanced consistency and improved data accuracy by launching a new internet based County Sanitary Survey System for contracted county staff that perform sanitary surveys and collect water samples at transient non-community water systems in 45 WI counties.

Thirty-five percent % of the violations at systems that became active in 2010 to 2012 were due to LCR consumer notification violations. WI DNR will review follow-up on LCR Consumer Notification violations and develop a management approach during FFY 2014.

Requested improvement – Improve communication with newly active systems about LCR consumer notification requirements.

9. [HYPERLINK

"<https://epa.qpx.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015F083.nsf?OpenDatabase>"] —WI DNR reports the number of CWSs with source water protection (SWP) plans and the number of CWSs implementing SWP measures (electronically via SDWIS, if possible) as of June 30 by August 15, annually. WI DNR commits to meeting the targets negotiated under OW NPM Guidance Measure SP-4a and b to minimize risk at CWSs through source water protection for both CWSs and their population served. WI DNR will update source water assessments, as resources allow, especially in prioritized areas, and complete source water assessment reports for new public water systems. WI DNR recently modified its wellhead protection program to include a facilitated incentive approach for geographic target areas. WI DNR is facilitating actions with partners and stakeholders in two areas of Rock and Sauk Counties to field truth if measureable nitrate reductions in groundwater can be achieved and sustained cost effectively, and has reached out to the National Source Water Collaborative for help in the effort.

10. [HYPERLINK

"<https://epa.qpx.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015F8CA.nsf?OpenDatabase>"] —There are multiple national measures in the national program manager guidance that support the “water safe to drink” subobjective 2.1.1 in EPA’s strategic plan, and R5 is also tracking several other measures, including those in the logic model reporting tool, regional shared goals, and regional high priority queries. The most recent data for Wisconsin for each of these measures are available via the “measures and indicators” link on the *Region 5 State PWSS Programs* Quickr site, some of which have been described above in this work plan summary. R5 will provide WI DNR with aggregated trends data from the LMRT for the period 2002-2012 by December 31, 2013.



11. Resources and expertise —WI DNR maintains a baseline core of individuals with the technical expertise to carry out all mandatory components of the PWSS Program (including engineering plan and specification review and emergency response) . In 2012, WI DNR had the equivalent of nearly 73 full-time staff working with the 11,409 public water systems. Sixty-three percent of the 2012 PWSS program budget was federally funded.

Contracts with third parties conducting mandatory components of the PWSS Program will make performance expectations clear, and will be measured and evaluated by the Department. In 2012, sixteen percent of the budget went to contracts with associations, county health departments, and consultants.

WI DNR develops and implements a plan to provide adequate funding to carry out all functions of the PWSS program and has been recently successful at filling vacancies. R5 wants WI DNR to continue progress on reinvestments.

## **Attachment A**

***WDNR acknowledges the following disinvestments from its primary responsibility to implement and enforce National Primary Drinking Water Regulations (NPDWR) during the October 2013 to September 2014 timeframe.***

### **1. Lead and Copper Rule – Consumer Notification**

All water systems must provide a notice of the individual tap results from lead tap water monitoring to the persons served by the water system at the specific sampling site from which the sample was taken (e.g., the occupants of the residence where the tap was tested). A water system must provide the consumer notice, along with other required information, as soon as practical, but no later than 30 days after the system learns of the tap monitoring results.

No later than 3 months following the end of the monitoring period, each system must mail a sample copy of the consumer notification of tap results to the State along with a certification that the notification has been distributed in a manner consistent with rule requirements.

WDNR began tracking compliance with lead consumer notification requirements with the monitoring period that ended on September 30, 2011. WDNR began reporting these violations to EPA in May 2012 but makes no commitment to follow-up on them. WDNR will weigh whether current resources are sufficient to change this policy and inform Region 5 of its decision by October 1, 2013.

### **2. Public Notification (PN) Rule Enforcement –**

a. WDNR will report PN violations for Tier 2 and Tier 3 violations to SDWIS-FED. They will not take steps to return these violations to compliance. WDNR will weigh whether current resources are sufficient to change this policy and inform Region 5 of its decision by October 1, 2013.

b. WDNR will only commit to report PN violations to EPA that are generated from data system programming logic. For example, they will not commit to update their data system to track PN violations that are stipulated as part of an enforcement order. Therefore, those PN violations will not be reported to EPA.

### 3. Consumer Confidence Rule Enforcement –

a. WDNR will report Consumer Confidence Report (CCR) violations to SDWIS-FED. They will not take steps to return these violations to compliance. WDNR will weigh whether current resources are sufficient to change this policy and inform Region 5 of its decision by October 1, 2013.

b. WDNR will not report CCRs received between July 1 and July 10 as a CCR “failure to report” violation.

4. Total Coliform Rule (sanitary surveys and monitoring schedules) - A non-community water system serving 1,000 persons or fewer must monitor each calendar quarter that the system provides water to the public, except that the WDNR may reduce this monitoring frequency, in writing, if a sanitary survey shows that the system is free of sanitary defects. The WDNR cannot reduce the monitoring frequency for these systems to less than once/year. Non-community water systems must undergo sanitary surveys every five years, unless the WDNR determines the ground water is protected and disinfected.

Approximately 80% of the 10,000-plus Wisconsin non-community water systems (NCWS) are allowed by the WDNR to monitor once/year. NCWSs assigned annual monitoring schedules by WDNR should be given quarterly schedules when sanitary surveys are not conducted at proper intervals.

WDNR does not commit to assign and report NCWS monitoring violations that occur when annual requirements change to quarterly because a sanitary survey is not updated within 5 years. However, WDNR has made significant progress in completing sanitary survey every five years, so fewer NCWSs need to change their monitoring frequency from annual to quarterly.

### 5. Radionuclides Rule Reporting Violations

WDNR does not commit to report or enforce reporting violations when CWSs send radionuclide samples to laboratories by the end of the appropriate monitoring period, but due to lab backlog, results are not generated that satisfy reporting requirements.

6. Ground Water Rule SDWIS Reporting

WDNR does not commit to meet all SDWIS reporting requirements until February 15, 2014.

7. Stage 2 Disinfectants/Disinfection By-Products Rule SDWIS Reporting

WDNR does not commit to meet all SDWIS reporting requirements until February 15, 2014.

8. Violations identified in Data Verifications

WDNR does not commit to issue violations to water systems retroactively after they are identified during data verifications but were not previously identified by the WDNR. These violations will not be reported to EPA.

***USEPA Region 5 acknowledges progress made by WDNR to reinvest in areas previously disinvested to improve PWSS program implementation in Wisconsin.***

*1. TCR Holding Time*

WDNR now only accepts TCR results where the initiation of analysis does not exceed 30 hours.

*2. TCR Repeat Monitoring Extensions*

The WDNR's database automatically determines TCR repeat monitoring violations after seven days from the collection of a total coliform-positive compliance sample. Previously, the database was programmed to allow up to 28 days before automatically generating the TCR repeat sampling violation. Region 5 determined this timeframe to be too long of a period for a TCR repeat monitoring extension.

*3. Phase 2/5 monitoring waivers*

WDNR recognizes an opportunity to reduce monitoring requirements for inorganic chemicals, volatile organic compounds, and synthetic organic chemicals for some public water systems based on their lack of occurrence during historical sampling. Because hiring restrictions were eased, WDNR is now able to revise its monitoring waiver policies to use vulnerability assessments and historic monitoring results to better determine appropriate monitoring schedules for PWSs.

WDNR piloted a draft revised monitoring waiver program in 2013 and will provide an opportunity for EPA review and public comment by November 30, 2013.

<p align="center"><b>National Primary Drinking Water Regulation Implementation in Wisconsin</b>  <b>Oct-2011 through Sep-2013</b>  Federal Funding Utilized – PWSS grant, DWSRF SPM and Local Assistance/Other State Program Set-Asides  WDNR Manager – Lee Boushon, [ <a href="mailto:Lee.Boushon@wi.gov">HYPERLINK "mailto:Lee.Boushon@wi.gov"</a> ], (608) 266-0857  USEPA Region 5 WI State Program Manager – Joe Janczy, [ <a href="mailto:Janczy.Joseph@epa.gov">HYPERLINK "mailto:Janczy.Joseph@epa.gov"</a> ], (608) 267-2763</p>				
Rule	Legal Status	Technical Contacts	Expectations	Evaluation WDNR = red Region 5 = olive green
SWTRs	1. SWTR = primacy  2. FBRR = interim primacy  3. IESWTR = primacy  4. LT1 = primacy  5. LT2 = interim primacy	<u>WDNR</u>  Larry Landsness [ <a href="mailto:Larry.Landsness@wi.gov">HYPERLINK "mailto:Larry.Landsness@wi.gov"</a> ] (608) 267-7647  <u>USEPA Region 5</u>  Andrea Porter [ <a href="mailto:Porter.Andrea@epa.gov">HYPERLINK "mailto:Porter.Andrea@epa.gov"</a> ] (312) 886-4427	[ EMBED Word.Document.8 \s ]  <u>State Commitment</u>  Complete	<u>Discrepancies</u>  Yes, acknowledged. WDNR does not commit to meet SDWIS reporting requirements for LT2 until December 31, 2011.  2012 – Until upgrades to DWS violation logic are made and all systems are using EMOR, staff will continue to review the paper copies and will notify data management staff if a violation needs to be inserted into the database manually.  2013 – The WDNR commits to report to EPA LT2 violations that are inserted into the data system manually. Discrepancy eliminated.  <u>Other Agreements</u>  Yes. Develop automated compliance determination capability through electronic data capture from monthly operating reports.  [ EMBED Word.Document.8 \s ] 2013 – WDNR is now capturing most of this data electronically, but automated compliance determinations or triggered staff alerts will not begin to proceed until late 2014.  <u>Milestones</u>  ➤ End of 2011 – WDNR determines if it will require electronic reporting of filter backwash

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Rule	Legal Status	Technical Contacts	Expectations	Evaluation WDNR = red Region 5 = olive green
				<p>recycling information [listed at 40 CFR Part 141.76(d)].</p> <p>2012 - Met (see 1.6 in attachment under the expectations column for details).</p> <ul style="list-style-type: none"> <li>➤ Jan-2012 – DWS will receive and store sufficient electronically reported information each month to allow staff or the data system to determine: <ul style="list-style-type: none"> <li>○ Compliance with every violation type found in Table 2-2a of the Data Entry Instructions for the IESWTR,</li> <li>○ Compliance with M/R and TT violations related to disinfection, and</li> <li>○ TTHM/HAA5 monitoring frequencies that are set from TOC information collected out of each treatment plant</li> </ul> </li> <li>➤ Jul-2012 – DWS will notify staff of potential treatment technique, monitoring and reporting violations related to residual disinfectant concentrations, filtered water turbidity, individual filter water turbidity by the eleventh of each month, and compliance determinations will be made for potential violations no later than the end of the month.</li> <li>➤ Sep-2012 – Any violations determined using electronic monthly report information will begin to be reported to SDWIS-FED.</li> </ul> <p>2012 - WDNR is behind on EMOR milestones, but continues to make progress. 81.6% of the municipal CWSs have used it. Sometime in 2013 or 2014, the DWS will trigger notifications to appropriate staff about</p>

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Rule	Legal Status	Technical Contacts	Expectations	Evaluation WDNR = red Region 5 = olive green
				<p>potential violations related to residual disinfectant concentrations, filtered water turbidity, individual filter turbidity monitoring, and all other required treatment.</p> <p>2013 – 98% of WI municipal CWSs have submitted at least one EMOR in 2013, and &gt;95% are submitting one every month.</p>
TCR	primacy	<p><u>WDNR</u></p> <p>Adam Deweese  [ <a href="mailto:Adam.Deweese@wisconsin.gov">HYPERLINK "mailto:Adam.Deweese@wisconsin.gov"</a> ]  (608) 264-9229</p> <p><u>USEPA Region 5</u></p> <p>Miguel DelToral  [ <a href="mailto:Deltoral.Miguel@epa.gov">HYPERLINK "mailto:Deltoral.Miguel@epa.gov"</a> ]  (312) 886-5253</p> <p>Joe Janczy  [ <a href="mailto:Janczy.Joseph@epa.gov">HYPERLINK "mailto:Janczy.Joseph@epa.gov"</a> ]  (608) 267-2763</p>	<p><u>Federal Expectation</u></p> <p>[ EMBED Word.Document.8 \s ]</p> <p><u>State Commitment</u></p> <p>Complete</p>	<p><u>Discrepancies</u></p> <p>Yes, acknowledged. They are related to TCR repeat monitoring time extensions, accepting samples for compliance that are held between 30 and 48 hours, and increasing NCWS monitoring requirements when sanitary surveys are not conducted within 5 year intervals. They are noted in Attachment B of the 2011-2013 EnPPA for drinking water and ground water programs.</p> <p>2012 - Discrepancies related to TCR repeat monitoring extensions and holding time have been eliminated. Only one TCR discrepancy described in Attachment B remains.</p> <p>2012 - As of October 1, 2012, WDNR no longer accept samples that are held for greater than 30 hours.</p> <p>[ EMBED Word.Document.8 \s ]</p> <p><u>Milestones</u></p> <p>➤ In 2011 and 2012 – work with staff from contracted counties to reduce TCR samples accepted for compliance purposes that exceed the holding time.</p>

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Rule	Legal Status	Technical Contacts	Expectations	Evaluation WDNR = red Region 5 = olive green
				<p>➤ Nov-2011 – Evaluate the implementation of GWR sample extension procedures and determine if the same violation determination defaults will be applied to TCR repeat sample extensions.</p> <p>➤ In 2012 – WDNR will implement repeat M/R violation sample extension default triggers in DWS that are tighter than 21 days.</p> <p>➤ Upon promulgation of TCR revisions – WDNR will no longer accept samples held longer than 30 hours.</p> <p>2012 - All milestones are met.</p> <p>2013- EPA highlights two improvements WDNR accomplished over the October 2011 to September 2013 period:</p> <ul style="list-style-type: none"> <li>• All labs and contracted counties were instructed to reject TCR samples that are held greater than 30 hours.</li> <li>• TCR repeat monitoring violations are automatically generated by the WDNR's data system if a result is not received 7 to 10 days after a PWS is notified of a TCR-positive result. Previously, the data system allowed up to 21 days before a violation was automatically generated.</li> </ul> <p>See <i>TCR implementation in WI.doc</i> for latest status on WI preparation for RTCR implementation.</p>
<b>GWR</b>	interim primacy	WDNR Adam Deweese [ <a href="mailto:Adam.Deweese@wisconsin.gov">HYPERLINK "mailto:Adam.Deweese@wisconsin.gov"</a> ]	<u>Federal Expectation</u>  [ EMBED Word.Document.8 \s	<u>Discrepancies</u>  Yes, acknowledged. WDNR does not commit to meet SDWIS reporting requirements until 12/31/11.



<b>National Primary Drinking Water Regulation Implementation in Wisconsin</b> <b>Oct-2011 through Sep-2013</b> <b>Federal Funding Utilized – PWSS grant, DWSRF SPM and Local Assistance/Other State Program Set-Asides</b> <b>WDNR Manager – Lee Boushon, [ <a href="mailto:Lee.Boushon@wi.gov">HYPERLINK "mailto:Lee.Boushon@wi.gov"</a> ], (608) 266-0857</b> <b>USEPA Region 5 WI State Program Manager – Joe Janczy, [ <a href="mailto:Janczy.Joseph@epa.gov">HYPERLINK "mailto:Janczy.Joseph@epa.gov"</a> ], (608) 267-2763</b>				
Rule	Legal Status	Technical Contacts	Expectations	Evaluation WDNR = red Region 5 = olive green
		<p>n.gov" ] (608) 264-9229</p> <p><u>USEPA Region 5</u> Mostafa Noureldin [ <a href="mailto:Noureldin.Mostafa@epa.gov">HYPERLINK "mailto:Noureldin.Mostafa@epa.gov"</a> ] (312) 353-4735</p> <p>Andrea Porter [ <a href="mailto:Porter.Andrea@epa.gov">HYPERLINK "mailto:Porter.Andrea@epa.gov"</a> ] (312) 886-4427</p> <p>Joe Janczy [ <a href="mailto:Janczy.Joseph@epa.gov">HYPERLINK "mailto:Janczy.Joseph@epa.gov"</a> ] (608) 267-2763</p>	<p>]</p> <p><u>State Commitment</u> Complete</p> <p><u>Region 5 Assistance</u></p> <p>Identifying legal deficiencies in primacy application and proper procedures for the reporting of significant deficiencies.</p>	<p>2012 - Additional discrepancy identified below.</p> <p>WDNR had an issue with determining GWR TT violations from 2010 – 2012. Field staff was inconsistent in what they identified as significant deficiencies. In addition, field staff inconsistently utilized the provision to grant additional time to correct significant deficiencies. Because of these issues, the accuracy of potential GWR TT violations from that period is in question. For this reason, WDNR has not included information about identified significant deficiencies and associated GWR TT violations into DWS when the significant deficiency was corrected by January 1, 2013. This decision by WDNR also means that associated PN and CCR violations will not be tracked or reported to EPA. WDNR is tracking confirmed GWR TT violations from the 2010-2012 timeframe which have not returned-to-compliance and these violations will be uploaded to SDWIS/FED when FedRep 3.4 or an alternative reporting mechanism is employed.</p> <p>Discrepancies continue. Open expectations attachment for details.</p> <p>2013 – The discrepancy continues but WDNR anticipates GWR TT and “other” violations will be reported in the February 2014 data submittal</p> <p><u>Milestones</u></p> <p>Dec-2011 – WDNR submits all required reporting to SDWIS-FED and provides quarterly updates each quarter</p>

<p align="center"><b>National Primary Drinking Water Regulation Implementation in Wisconsin</b>  <b>Oct-2011 through Sep-2013</b>  Federal Funding Utilized – PWSS grant, DWSRF SPM and Local Assistance/Other State Program Set-Asides  WDNR Manager – Lee Boushon, [ <a href="mailto:Lee.Boushon@wi.gov">HYPERLINK "mailto:Lee.Boushon@wi.gov"</a> ], (608) 266-0857  USEPA Region 5 WI State Program Manager – Joe Janczy, [ <a href="mailto:Janczy.Joseph@epa.gov">HYPERLINK "mailto:Janczy.Joseph@epa.gov"</a> ], (608) 267-2763</p>				
Rule	Legal Status	Technical Contacts	Expectations	Evaluation WDNR = red Region 5 = olive green
				<p>thereafter.</p> <p>2012 - Not met. 2013 – Not met.</p> <p>Jan-2012 - DWS will receive and store sufficient electronically reported information each month to allow staff or the data system to determine compliance with state-specified requirements for the approved treatment technology (disinfection, membranes, or alternative treatment) used to implement corrective action.</p> <p>2012 - Met.</p> <p>Jul-2012 – DWS will inform staff when a TT violation is triggered for not completing corrective action on time.</p> <p>2012 - Not met. 2013 – Not met.</p> <p>2012 - As of January, 2013 the DWS automatically generates TTVs for not completing corrective actions on time.</p> <p>2013 –USEPA expects to receive WI GWR TT violation data in February 2014 to verify that TTVs are being determined. SDWIS/FED depicts that GWR monitoring violations are being determined by the WDNR. 2.1% (n=21) of CWSs did not have a sanitary survey conducted within 2010-2012.</p>
<b>NO<sub>2</sub>/NO<sub>3</sub></b>	primacy	<u>WDNR</u>	<u>Federal Expectation</u>	<u>Discrepancies</u>

<b>National Primary Drinking Water Regulation Implementation in Wisconsin</b> <b>Oct-2011 through Sep-2013</b> <b>Federal Funding Utilized – PWSS grant, DWSRF SPM and Local Assistance/Other State Program Set-Asides</b> <b>WDNR Manager – Lee Boushon, [ <a href="mailto:Lee.Boushon@wi.gov">HYPERLINK "mailto:Lee.Boushon@wi.gov"</a> ], (608) 266-0857</b> <b>USEPA Region 5 WI State Program Manager – Joe Janczy, [ <a href="mailto:Janczy.Joseph@epa.gov">HYPERLINK "mailto:Janczy.Joseph@epa.gov"</a> ], (608) 267-2763</b>				
Rule	Legal Status	Technical Contacts	Expectations	Evaluation WDNR = red Region 5 = olive green
		Alfredo Sotomayor [ <a href="mailto:Alfredo.Sotomayor@wi.gov">HYPERLINK "mailto:Alfredo.Sotomayor@wi.gov"</a> ] (608) 266-9257  <u>USEPA Region 5</u>  Joe Janczy [ <a href="mailto:Janczy.Joseph@epa.gov">HYPERLINK "mailto:Janczy.Joseph@epa.gov"</a> ] (608) 267-2763	[ <a href="#">EMBED Word.Document.8 \s</a> ] 2013 – open attachment for an update under 4.4.  <u>State Commitment</u>  Complete	None  2013 – WDNR formed a workgroup to evaluate its use of the discretion to allow a NCWS to operate if nitrate levels do not exceed 20 mg/l. The workgroup produced draft guidance which will be put out for public comment in 2014.
LCR	LCR = primacy LCSTR = interim primacy	<u>WDNR</u>  Mark Nelson [ <a href="mailto:Mark.Nelson@wi.gov">HYPERLINK "mailto:Mark.Nelson@wi.gov"</a> ] (608) 267-4230  <u>USEPA Region 5</u>  Miguel DelToral [ <a href="mailto:Deltoral.Miguel@epa.gov">HYPERLINK "mailto:Deltoral.Miguel@epa.gov"</a> ] (312) 886-5253	<u>Federal Expectation</u>  [ <a href="#">EMBED Word.Document.8 \s</a> ]  <u>State Commitment</u>  Partial  <u>Region 5 Assistance</u>  Will assist at least 1 WI school/daycare water systems to optimize corrosion control.  Follow-up on consumer notification	<u>Discrepancies</u>  Yes, acknowledged. WDNR was not implementing the consumer notification requirements until the monitoring period that ended on September 30, 2011. WDNR makes no commitment to follow-up on consumer notification violations.  2012 - WDNR now reports LCR consumer notification violations to SDWIS/FED, and still makes no commitment to follow-up on the violations.  2013 - WDNR has agreed to follow up on Lead Customer Notice violations beginning in 2014. See attached implementation doc.  2013 – Discrepancy eliminated. EPA looks forward to seeing state enforcement codes submitted to SDWIS/FED for lead consumer notification violations in 2014.

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Rule	Legal Status	Technical Contacts	Expectations	Evaluation WDNR = red Region 5 = olive green
			violations.	<u>Milestones</u>  By May 2012 – First consumer notification violations are reported to SDWIS-FED. By Jul-2012 – All consumer notification violations are reported. By Jan-2013 – Consumer notification compliance determinations are automated in DWS.  2012 - All milestones are met.
<b>D/DBPR</b>	Stage 1 = primacy Stage 2 = interim primacy	<u>WDNR</u>  Alfredo Sotomayor [ <a href="mailto:Alfredo.Sotomayor@wi.gov">HYPERLINK "mailto:Alfredo.Sotomayor@wi.gov"</a> ] (608) 266-9257  <u>USEPA Region 5</u>  Mostafa Noureldin [ <a href="mailto:Noureldin.Mostafa@epa.gov">HYPERLINK "mailto:Noureldin.Mostafa@epa.gov"</a> ] (312) 353-4735	<u>Federal Expectation</u>  [ EMBED Word.Document.8 \s ]  <u>State Commitment</u>  Complete	<u>Discrepancies</u>  Yes, acknowledged. WDNR does not commit to meet SDWIS reporting requirements until 12/31/11.  2012 - Not met. WDNR projects it will submit the first Stage 2 M/R violations with the February 2013 submittal.  2013 - Please refer to Section 6.4 of <i>DBP implementation in Wisconsin.doc</i> for WDNR's latest assessment of this activity.  <u>Milestones</u>  Dec-2011 – submit all required reporting to SDWIS-FED and provide updates each quarter thereafter.  Jan-2012 – DWS will receive and store sufficient electronically reported information each month to allow staff or the data system to determine: <ul style="list-style-type: none"> <li>○ Compliance with every violation type</li> </ul>

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Rule	Legal Status	Technical Contacts	Expectations	Evaluation WDNR = red Region 5 = olive green
				<p>found in Table 2-1a of the Data Entry Instructions for Stage 1 D/DBPR,</p> <ul style="list-style-type: none"> <li>➤ DWS will be able to: <ul style="list-style-type: none"> <li>○ Establish monitoring requirements and MCL calculations based on LRAAs</li> <li>○ Determine compliance with maximum disinfectant residual levels for consecutive systems that do not add a disinfectant but deliver water that has been disinfected.</li> <li>○ Determine exceedances of operational evaluation levels</li> </ul> </li> </ul> <p>2012 - Not Met. DWS is programmed to determine requirements and MCL, M/R, and MRDL violations, including for LRAAs. DWS does not yet handle the determination of exceedances of operational evaluation levels.</p> <p>2013 - Programming for determining exceedances of operational evaluations levels is in progress and will be completed in 2014. Monitoring data gathered so far by WDNR suggests that very few systems will exceed operational evaluation levels.</p> <p>2013 – Mostly met. There was a lot of progress made in 2012 and 2013, with automatic compliance determinations for operational evaluation levels being about the final incomplete commitment remaining.</p>
IOC	primacy	<u>WDNR</u> Alfredo Sotomayor [ <a href="mailto:Alfredo.Sotomayor@wi.gov">HYPERLINK "mailto:Alfredo.Sotomayor@wi.gov"</a> ]	<u>Federal Expectation</u>  [ EMBED Word.Document.8 \s	<u>Discrepancies</u>  None

<b>National Primary Drinking Water Regulation Implementation in Wisconsin</b> <b>Oct-2011 through Sep-2013</b> <b>Federal Funding Utilized – PWSS grant, DWSRF SPM and Local Assistance/Other State Program Set-Asides</b> <b>WDNR Manager – Lee Boushon, [ <a href="mailto:Lee.Boushon@wi.gov">HYPERLINK "mailto:Lee.Boushon@wi.gov"</a> ], (608) 266-0857</b> <b>USEPA Region 5 WI State Program Manager – Joe Janczy, [ <a href="mailto:Janczy.Joseph@epa.gov">HYPERLINK "mailto:Janczy.Joseph@epa.gov"</a> ], (608) 267-2763</b>				
Rule	Legal Status	Technical Contacts	Expectations	Evaluation WDNR = red Region 5 = olive green
		v" ] (608) 266-9257  <a href="#">USEPA Region 5</a> Miguel DelToral [ <a href="mailto:Deltoral.Miguel@epa.gov">HYPERLINK "mailto:Deltoral.Miguel@epa.gov"</a> ] (312) 886-5253  For arsenic – Kim Harris [ <a href="mailto:Harris.Kimberly@epa.gov">HYPERLINK "mailto:Harris.Kimberly@epa.gov"</a> ] (312) 886-4239	]  <a href="#">State Commitment</a>  Complete	2013 – EPA looks forward to reviewing the changes to the monitoring waiver program in 2014. See 7.1 in expectations attachment for the WDNR update.
<b>Rads</b>	primacy	<a href="#">WDNR</a> Mark Nelson [ <a href="mailto:Mark.Nelson@wi.gov">HYPERLINK "mailto:Mark.Nelson@wi.gov"</a> ] (608) 267-4230  <a href="#">USEPA Region 5</a> Miguel DelToral [ <a href="mailto:Deltoral.Miguel@epa.gov">HYPERLINK "mailto:Deltoral.Miguel@epa.gov"</a> ] (312) 886-5253	<a href="#">Federal Expectation</a>  [ <a href="#">EMBED Word.Document.8 \s</a> ]  <a href="#">State Commitment</a>  Complete, but see discrepancies under the evaluation column.	<a href="#">Discrepancies</a>  Yes, acknowledged. WDNR does not commit to enforce reporting violations when CWSs send radionuclide samples to labs by the end of the monitoring period, but due to lab backlog, results are not generated that satisfy reporting requirements.  2012 - This disinvestment continues. 2013 - same  2013 - Region 5 fully supports the WDNR approach to begin to grant State certifications to labs for radionuclides based on accreditation for drinking water by a recognized accreditation body under NELAP.
<b>SOC</b>	primacy	<a href="#">WDNR</a> Alfredo Sotomayor	<a href="#">Federal Expectation</a>	<a href="#">Discrepancies</a>

<b>National Primary Drinking Water Regulation Implementation in Wisconsin</b> <b>Oct-2011 through Sep-2013</b> <b>Federal Funding Utilized – PWSS grant, DWSRF SPM and Local Assistance/Other State Program Set-Asides</b> <b>WDNR Manager – Lee Boushon, [ <a href="mailto:Lee.Boushon@wi.gov">HYPERLINK "mailto:Lee.Boushon@wi.gov"</a> ], (608) 266-0857</b> <b>USEPA Region 5 WI State Program Manager – Joe Janczy, [ <a href="mailto:Janczy.Joseph@epa.gov">HYPERLINK "mailto:Janczy.Joseph@epa.gov"</a> ], (608) 267-2763</b>				
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		<a href="mailto:Alfredo.Sotomayor@wi.gov">[ HYPERLINK "mailto:Alfredo.Sotomayor@wi.gov" ]</a> (608) 266-9257  <u>USEPA Region 5</u> Miguel DelToral <a href="mailto:Deltoral.Miguel@epa.gov">[ HYPERLINK "mailto:Deltoral.Miguel@epa.gov" ]</a> (312) 886-5253	<a href="#">[ EMBED Word.Document.8 \s ]</a>  <u>State Commitment</u>  Complete	None  2013 – EPA looks forward to reviewing the changes to the monitoring waiver program in 2014. See 9.1 in expectations attachment for the WDNR update.
<b>VOC</b>	primacy	<u>WDNR</u> Alfredo Sotomayor <a href="mailto:Alfredo.Sotomayor@wi.gov">[ HYPERLINK "mailto:Alfredo.Sotomayor@wi.gov" ]</a> (608) 266-9257  <u>USEPA Region 5</u> Miguel DelToral <a href="mailto:Deltoral.Miguel@epa.gov">[ HYPERLINK "mailto:Deltoral.Miguel@epa.gov" ]</a> (312) 886-5253	<u>Federal Expectation</u>  <a href="#">[ EMBED Word.Document.8 \s ]</a>  <u>State Commitment</u>  Complete	<u>Discrepancies</u>  None  2013 – EPA looks forward to reviewing the changes to the monitoring waiver program in 2014. See 10.1 in expectations attachment for the WDNR update.
<b>Sodium</b>		<u>WDNR</u> Alfredo Sotomayor <a href="mailto:Alfredo.Sotomayor@wi.gov">[ HYPERLINK "mailto:Alfredo.Sotomayor@wi.gov" ]</a> (608) 266-9257	<u>Federal Expectation</u>  <a href="#">[ EMBED Word.Document.8 \s ]</a>  <u>State Commitment</u>	<u>Discrepancies</u>  None  2013 – There are no changes to review.

<b>National Primary Drinking Water Regulation Implementation in Wisconsin</b> <b>Oct-2011 through Sep-2013</b> <b>Federal Funding Utilized – PWSS grant, DWSRF SPM and Local Assistance/Other State Program Set-Asides</b> <b>WDNR Manager – Lee Boushon, [ <a href="mailto:Lee.Boushon@wi.gov">HYPERLINK "mailto:Lee.Boushon@wi.gov"</a> ], (608) 266-0857</b> <b>USEPA Region 5 WI State Program Manager – Joe Janczy, [ <a href="mailto:Janczy.Joseph@epa.gov">HYPERLINK "mailto:Janczy.Joseph@epa.gov"</a> ], (608) 267-2763</b>				
Rule	Legal Status	Technical Contacts	Expectations	Evaluation WDNR = red Region 5 = olive green
		<a href="#">USEPA Region 5</a> Miguel DelToral [ <a href="mailto:Deltoral.Miguel@epa.gov">HYPERLINK "mailto:Deltoral.Miguel@epa.gov"</a> ] (312) 886-5253	Complete	
PN		<a href="#">USEPA Region 5</a> Kristina Bell [ <a href="mailto:Bell.Kristina@epa.gov">HYPERLINK "mailto:Bell.Kristina@epa.gov"</a> ] (312) 886-7489	<u>Federal Expectation</u>  [ EMBED Word.Document.8 \s ]  <u>State Commitment</u>  Partial	<u>Discrepancies</u>  Yes, acknowledged. WDNR will report but not enforce Tier 2 and Tier 3 level PN violations. WDNR will only report automatically generated PN violations to EPA.  2012 - This disinvestment continues although there have been management level discussions on alternatives. Accordingly, the number of old, unresolved PN violations continue to grow.  Newly identified discrepancy – WDNR will not determine or report PN violations that stem from GWR TT violations that occurred between January 2010 and December 2012, but were resolved before January 2013.  2013 - Starting on <u>January 1, 2014</u> : the Department will send Notice of Noncompliance (NON) letters for all new tier 2 and tier 3 PN violations.  2013 – Going forward, this discrepancy has been eliminated. SDWIS indicator trends suggest the number of WI Tier 3 violations reduced in 2012 and fewer Tier 3 violations are enduring for > 365 days w/o a state enforcement response.



<b>National Primary Drinking Water Regulation Implementation in Wisconsin</b> <b>Oct-2011 through Sep-2013</b> <b>Federal Funding Utilized – PWSS grant, DWSRF SPM and Local Assistance/Other State Program Set-Asides</b> <b>WDNR Manager – Lee Boushon, [ <a href="mailto:Lee.Boushon@wi.gov">HYPERLINK "mailto:Lee.Boushon@wi.gov"</a> ], (608) 266-0857</b> <b>USEPA Region 5 WI State Program Manager – Joe Janczy, [ <a href="mailto:Janczy.Joseph@epa.gov">HYPERLINK "mailto:Janczy.Joseph@epa.gov"</a> ], (608) 267-2763</b>				
Rule	Legal Status	Technical Contacts	Expectations	Evaluation WDNR = red Region 5 = olive green
				<u>Milestone</u>  Dec-2011 – update compliance strategy and submit it to USEPA Region 5.  Met
CCR	primacy	<u>USEPA Region 5</u> Janet Kuefler [ <a href="mailto:Kuefler.Janet@epa.gov">HYPERLINK "mailto:Kuefler.Janet@epa.gov"</a> ] (312) 886-0123	<u>Federal Expectation</u>  [ EMBED Word.Document.8 \s ] <u>State Commitment</u>  Partial	<u>Discrepancies</u>  Yes, acknowledged. WDNR will not report CCRs received between July 1 and July 10 as a CCR “failure to report” violation. WDNR will report but not enforce CCR violations.  2012 - Both discrepancies continue. Accordingly, the number of old, unresolved PN violations continue to grow.  Newly identified discrepancy – WDNR will not determine or report CCR violations that stem from GWR TT violations that occurred between January 2010 and December 2012, but were resolved before January 2013.  2013 - Starting on <u>July 1, 2014</u> : CCRs will be reviewed by field Engineers and Specialists and the Department will issue NONs for violations of delivery/content and failure to send the CCR Certification.  2013 – Beginning in July 2014, this discrepancy will be eliminated.  <u>Milestones</u>

National Primary Drinking Water Regulation Implementation in Wisconsin Oct-2011 through Sep-2013				
Federal Funding Utilized – PWSS grant, DWSRF SPM and Local Assistance/Other State Program Set-Asides				
WDNR Manager – Lee Boushon, [ <a href="mailto:Lee.Boushon@wi.gov">HYPERLINK "mailto:Lee.Boushon@wi.gov"</a> ], (608) 266-0857				
USEPA Region 5 WI State Program Manager – Joe Janczy, [ <a href="mailto:Janczy.Joseph@epa.gov">HYPERLINK "mailto:Janczy.Joseph@epa.gov"</a> ], (608) 267-2763				
Rule	Legal Status	Technical Contacts	Expectations	Evaluation WDNR = red Region 5 = olive green
				None

Implementation of the Lead and Copper Rule and Revisions in Wisconsin  
Oct-2011 through Sep-2013

Federal Funding Utilized – PWSS grant, DWSRF SPM and Local Assistance/Other State Program Set-Asides

	<b>WDNR and/or Region 5 Activity</b>	<b>Performance Measures and/or Outcomes</b>	<b>WDNR and/or Region 5 Evaluation Date</b>
<b>5</b>	<b>Implement the Lead &amp; Copper Rule</b>	WDNR commits to implementing all activities, except where noted under 5.7.	
5.1	<p>Adopt LCR short-term revisions in a timely manner and apply for primacy (within two year extension period).</p> <p>Region 5 Activity – Provide training for states on treatment changes that could affect lead levels (focus on chlorine and chloramines, in anticipation of Stage 2 compliance in 2012).</p>	WDNR adopted short-term revisions in December 2010 and Region 5 received the primacy package on May 10, 2011.	<p>2012 - WDNR is waiting on final comments on the primacy package.</p> <p>2012 – An email version of our findings was delivered to the WDNR on March 8, 2013.</p> <p>2013 - WDNR responded to Region 5 comments on April 18, 2013.</p> <p>2013 – We will review the corrections to the LCRSTR primacy submittal when they are provided to EPA by the WDNR.</p>
5.2	<p>Incorporate rule revisions into state oversight and enforcement operations.</p> <p>R5 Activity - track progress related to state and EPA efforts to obtain additional resources necessary to enable WDNR to implement and enforce lead consumer notification</p>	WDNR begins determining compliance with consumer notification requirements for water systems on a monitoring compliance	2012 - WDNR included compliance with consumer notification requirements and issuing “66” violations as of 10/2010.

	requirements.	schedule that ends on September 30, 2011.	
5.3	<p>Notify all CWSs and NTNCWSs of their regulatory requirements.</p>	<p>Public water systems are notified of their requirements, and monitoring schedules are updated and made available on-line.</p>	<p>2012 - Final monitoring schedules for 2012 were mailed to systems by 1/30/2012. Preliminary monitoring schedules were posted to the web by 8/33/2012 for 2013 monitoring.</p> <p>2013 -- Email correspondence from Constantine Tsoris announced the mailing of the 2014 monitoring schedules for CWSs and NNS on January 14 and 15. The vast majority of the TN schedules were already sent to either the PWS or to the county contract responsible for sample collection.</p>
5.4	<p>Maintain a data base management system that accurately tracks lead and copper action level exceedances (sample data), violations, and other required reporting elements for CWSs and NTNCWSs.</p> <p>R5 Activity - track progress related to state and EPA efforts to obtain additional resources necessary to enable WDNR to program its database to determine compliance with lead consumer notification requirements.</p>	<p>DWS is programmed to determine water system compliance with requirement to provide lead results to consumers by January 2013.</p> <p>R5 requests that WDNR check that service area designations are appropriate for systems that primarily serve children, as discussed under activity 17.3.</p>	<p>2012 - Lead consumer notice violations have been automatically generated in the DWS since September 2011 and reported as part of quarterly reporting since November 2011.</p> <p>WDNR reviewed list of facilities that was provided. In January 2012 WDNR notified EPA Region V that we felt the service area was being reported properly and asked whether we needed to change the way we report multiple service areas (most had multiple service areas with "School" being sent as the Primary service area). We have not heard back whether there is a problem with our reporting or whether there was a problem with pulling the data from SDWIS as of October 2012.</p>

			<p>2012 - After a review of both SDWIS/FED ODS and Data Warehouse the data discrepancies have been corrected. The Region believes there is no longer an issue with reporting service areas by WDNr.</p> <p>2013 - The water systems with school service area have all been changed to make the school the primary service area.</p>
5.5	<p>Electronically report violation and milestone data to SDWIS-FED for all CWSs and NTNCWSs and lead and copper 90<sup>th</sup> percentile action level sample data for all large and medium sized systems and 90<sup>th</sup> percentile action level exceedance sample data for small systems.</p> <p>Region 5 Activity: Region 5 will finalize the LCR module of the compliance determination and violation reporting training (CDVRT).</p> <p>► Region 5 will evaluate extent to which LCRSTR violations are reported to SDWIS/FED.<sup>1</sup> As of April 2011, no violations were reported.</p> <p>► Region 5 will evaluate completeness of reporting LCR 90<sup>th</sup> percentile action level sample data.<sup>3</sup></p> <p>As of April 2011, LCR 90<sup>th</sup> percentile AL</p>	<p>WDNR submits required reporting quarterly, except for consumer notification (“66”) violations. WDNR will start determining “66” violations based on compliance with monitoring schedules that end September 30, 2011. WDNR will report their first “66” violations by May 2012. WDNR is fully up-to-speed with consumer notification compliance determinations and reporting by July 2012. WDNR programming is done in DWS to</p>	<p>2012 - Lead consumer notice violations have been automatically generated in the DWS since September 2011 and included in the quarterly reporting since November 2011.</p> <p>2013 -- Queries from the October 2013 SDWIS frozen data set confirms that WDNR now tracks and reports lead consumer notice violations. The WDNR reported 429 lead consumer notice violations to EPA as of October 2013.</p>

	<p>SDWIS/FED data was 96.7% complete for medium and large CWSs and NCWSs (176/182).</p> <p>R5 Activity - track progress related to state and EPA efforts to obtain additional resources necessary to enable WDNR to program its database to report lead consumer notification requirements to EPA.</p>	<p>automate compliance determinations by January 2013.</p>	
5.6	<p>Designate OCCT and follow-up on OCCT installation violations at all required water systems.</p> <p>Note: WDNR will continue to receive water quality parameter information from the water system on paper forms rather than upgrade to receive it electronically.</p> <p>Region 5 Activity – OCCT/OWQP training was held July 11 and 12, 2011 in Chicago, IL with a WDNR representative participating. Will assist 7 school/daycare water systems to optimize corrosion control.</p>	<p>Treatment recommendations will be provided for 7 school/daycare systems identified by WDNR with recurring lead action level exceedances.</p>	<p>2012 - WDNR, along with technical assistance providers, continues to work with high-risk systems, such as schools and daycares, to help determine optimum corrosion control treatment, or identify other options to return to compliance with lead/copper action levels.</p> <p>2012 - Region 5 is instead assisting with follow-up to “66” violations at schools and daycares.</p> <p>13 was the sum total of WI PWSs with LCR TT violations reported to SDWIS/FED from each year in the 2007-2011 period, as reported to SDWIS/FED as of April 2012.</p> <p>2013 – In the 2008 – 2012 timeframe, there were between 1 and 6 WI PWSs with LCR TT violations each year, with 6 occurring in 2012. [Source: LMRT S5(1) indicator generated from</p>

			<p>the April 2013 SDWIS frozen data set]</p> <p>Of the 4 LCR TT violations that began and returned to compliance in the 2008 – 2012 timeframe, 2 were for not meeting public education and 2 were for not meeting OCCT study requirements. The average time it took for these violations to RTC was 311 days. [Source: LMRT O6(2b) indicator generated from the April 2013 SDWIS frozen data set]</p>
5.7	<p>Follow-up on all M/R violations</p> <p>Region 5 Activity: Region 5 will assist as necessary, or as requested.</p>	<p>WDNR will not follow-up on lead consumer notification (“66”) violations.</p>	<p>2012 - WDNR follows up on all M/R violations with the exception of “66” violations and tracks follow-up using quarterly management reports.</p> <p>2012 – USEPA Region 5 is following up with 11 WI school or daycare PWSs to rectify lead consumer notification violations.</p> <p>As reported to SDWIS/FED as of April 2012, the number of WI PWSs with LCR M/R violations annually ranged from 9 (2007 &amp; 2009) to 73 (2011) as reported to SDWIS/FED for the 2007-2011 period. The high total in 2011 is explained by the new “66” consumer notification violations being first reported to SDWIS/FED in that year.</p> <p>2013 - WDNR has agreed to continue to track, report, and follow up on “66” Lead Customer Notice violations beginning in 2013. WDNR will work with EPA to address any backlog of</p>

			<p>“66” violation prior to 2014.</p> <p>2013 – Region 5 appreciates WDNr reinvesting in lead consumer notification violation follow-up.</p> <p>As reported to SDWIS/FED as of April 2013, the number of WI PWSs with LCR M/R violations annually ranged from 9 in 2009 to 213 in 2012 for the 2008 - 2012 period. One hundred ninety-nine of the year 2012 violations were “66” consumer notification violations. [Source: LMRT S5(2) indicator]</p>
5.8	<p>Set water quality parameter ranges for all PWSs that are required to optimize corrosion control.</p> <p>Region 5 Activity – OCCT/OWQP training July 11 and 12, 2011 in Chicago, IL.</p>		<p>WDNR staff attended the OCCT/OWQP training in July 2011. EPA developed a draft flow chart for setting OCCT ranges. EPA solicited comments on the flow charts, and will produce a final version. WDNr sets water quality parameter ranges for large and some medium systems. WDNr will set water quality parameter ranges for small systems and determine if OWQP already set should be revisited when the flow charts are final.</p>



Proposed Cu Monitoring Framework		
Systems without OCCT Installed (With WQP Data)	Systems Without OCCT Installed (Without WQP Data)	Systems with OCCT Installed
<p><b>Rule Provisions:</b> Any system that meets the WQP criteria is deemed to be optimized for Cu, and not required to conduct Cu monitoring.</p> <p>Large and medium systems must use EP and DS WQP monitoring.</p> <p>Small systems use EP WQP data, unless State requires DS data as well (e.g., system is spread out).</p>	<p><b>Rule Provisions:</b> Any system that does not have OCCT in place and does not have WQP data shall monitor for WQPs to determine the corrosivity of the water toward Cu.</p> <p>Any system that does not meet the WQP criteria shall conduct Cu monitoring (TBD*), and install OCCT if needed.</p> <p>*Cu monitoring (site selection, etc.) TBD by Tiering subgroup. If a Tiering definition is agreed on, it would be in the rule. If not there would be a request for comment on new Cu monitoring in the preamble.</p>	<p><b>Rule Provisions:</b> Any system that has system-wide OCCT in place on the effective date of the LCR revisions is deemed optimized for Cu, and is not required to conduct Cu monitoring.</p> <p>Any system that does not have system-wide OCCT in place must demonstrate that they meet the WQP criteria to be deemed optimized in the untreated zones.</p> <p>Any system that does not meet the WQP system-wide must conduct Cu monitoring (based on Tiering decisions) and install OCCT in all untreated zones not meeting the Cu action level.</p>
Making the Case for Copper Waivers Using PWS Data		
<p>We will ask for the information below from a total of 9 States. Additionally, we have Pb/Cu 90<sup>th</sup> percentile Pb/Cu data (exceedances and non-exceedances) from 17 States which was publicly available for download from their websites.</p> <p>Not all of the information below will be used in the Copper Waiver effort, but this is a one-time data collection opportunity, so we are also collecting some additional information that will be useful for future studies.</p>		
<p><b>System Information</b> PWS type (CWS/NTNCWS) Source type (GW/SW) Population served PWS activation date Number of treatment plants, wells, entry points &amp; State Identifiers Treatment installed, treatment purpose and treatment installation date for any of the following:</p> <ul style="list-style-type: none"> <li>• Disinfection</li> <li>• Blended phosphate</li> <li>• Polyphosphate</li> <li>• Silicate</li> <li>• Orthophosphate</li> <li>• pH/alkalinity adjustment</li> <li>• Lime softening</li> <li>• IX softening</li> <li>• Fe/Mn/As Removal</li> </ul>	<p><b><u>Parametric Data (Raw, Entry Point and Distribution System)</u></b> Pb/Cu 90<sup>th</sup> percentile data (exceedances and non-exceedances) Individual Pb/Cu results (exceedances and non-exceedances) pH, Alkalinity, Orthophosphate, Conductivity, Hardness, Calcium, Iron, Manganese, Disinfectant levels, Sulfate, Chloride, Ammonia (as N), TOC</p>	
	<p><b><u>The Data Will Be Evaluated to Determine the Following</u></b></p> <p><u>Passivation time for given pH/Alkalinity (6 month and 1 yr increments)</u></p> <ul style="list-style-type: none"> <li>• With/without orthophosphate treatment</li> <li>• With/without disinfection/oxidation</li> </ul> <p><u>PWSs with OCCT installed that still exceed Cu AL</u></p> <ul style="list-style-type: none"> <li>• Number and percentage of PWSs</li> <li>• pH/Alkalinity/Other parameter ranges</li> </ul>	

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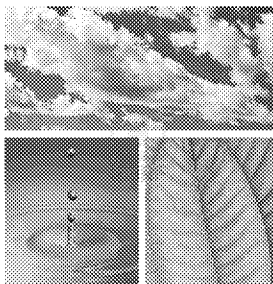
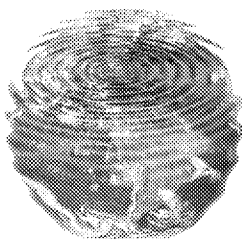
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# Region 5 PWSS State Directors' Meeting



Tuesday, April 29 and  
Wednesday, April 30, 2014

USEPA R5 Office  
12th Floor Conference Center  
Lake Michigan and Superior Rooms  
77 W. Jackson Blvd, Chicago



## R5 PWSS Directors' Meeting Agenda

<p><u>Tuesday, April 29, 2014, Lake Michigan Room</u>            Conference call line 1-877-226-9607, conf code 998-015-9052.</p>		
8:00 am	Early Bird Special: Coffee, Juice, Bagels, Cream Cheese and Networking	All
8:30 am	Setting the Stage for the Day: Welcome, Logistics, Introductions	Tom Poy, R5 GWDWB
	Opening remarks	Tim Henry or Tinka Hyde, R5 WD
9:00 am	USEPA Headquarters' Perspectives  <i>Objective: States will receive updated information and responses to questions on office priorities, budget outlook, nutrients, SDWIS-Prime, NCWS Capacity Development, RTCR, tank inspections proposed legislation, lead free act implementation and other current topics</i>	Michelle Schutz, OGWDW
10:00 am	<b>Break</b>	
10:15 am	States Round Robin (15 minutes per state): OH, WI, IL, IN, MI, MN <ul style="list-style-type: none"> <li>• Issues, changes, areas of focus</li> <li>• What are our next steps?</li> </ul> <i>Objective: Understand the status and challenges of State programs, share resources and insights, provide a foundation for future discussions of State priorities and R5 oversight priorities.</i>	State PWSS Directors
12:00 pm	<b>Lunch on Your Own</b>	
1:30 pm	Program Measures <ul style="list-style-type: none"> <li>• National Measures (5 mins)</li> <li>• Shared goals (5 mins)</li> <li>• Regional high priority data queries, including new rule reporting (10 mins)</li> <li>• Primacy (5 mins)</li> </ul>	Tom Poy Rita Bair State PWSS Directors
2:00 pm	Program implementation <ul style="list-style-type: none"> <li>• Grants – DWSRF, PWSS Q&amp;A</li> <li>• Lab Certification</li> <li>• Security</li> <li>• RTCR implementation—state perspectives and status of state rule adoption, with state discussion of specific NCWS implementation challenges. Impact of data system delays on primacy.</li> <li>• LCR variances from treatment (utility of allowing PWSs to bypass treatment and go straight to full LSL replacement in cases where phosphorus reductions need to occur in nearby waterbodies)</li> </ul>	Jennifer Crooks Dan Cozza, STPB Rita Bair Alicia Brown/Dean Maraldo Miguel Del Toral Jill Jonas, WDNR, State PWSS Directors
3:00 pm	<b>Break</b>	
3:15 pm	Emerging contaminants <ul style="list-style-type: none"> <li>• MDH experience and discussion from other states on evaluating health risks of regulated or unregulated contaminants, sometimes at levels below the current federal MCLs.</li> </ul>	Randy Ellingboe, MDH Dave McMillan, IEPA & Mike Baker, OEPA; State PWSS Directors

	<ul style="list-style-type: none"> <li>Harmful Algal Blooms/algal toxins &amp; State activities to reduce occurrence and to monitor near intakes (what monitoring strategies states are using and what are the threshold levels for issuing use advisories; how MN set their level and plans for when USEPA issues advisory numbers)</li> <li>PFCs</li> </ul>	
4:30 pm	<b>Adjourn</b>	
5:30 pm	Group Dinner - Rock Bottom Restaurant and Brewery (1 West Grand Avenue) Meet in Club Quarters Hotel Lobby (111 W. Adams) at 5:30 PM to walk over to restaurant. We have reservations at 6:00 PM.	All

<p style="text-align: center;"><u>Wednesday, April 30, 2014, Lake Superior Room</u> Conference call line Conference call line 1-877-226-9607, conf code 998-015-9052</p>		
8:00 am	Early Bird Special: Coffee, Juice, Bagels, Cream Cheese, and Networking	All
8:30 am	<p>Farm Bill/Nutrients</p> <ul style="list-style-type: none"> <li>Ways PWS and States can protect drinking water, and assistance that can be provided.</li> <li>Ways EPA plans to work with partner agencies and internally in water and agriculture programs to assure a focus on drinking water source protection.</li> <li>Q&amp;A and discussion about coordination with USDA.</li> </ul>	<p>Jimmy Bramblett, WI State Conservationist, USDA-NRCS</p> <p>Ellen Gilinsky, EPA HQ OW (via teleconference)</p> <p>PWSS State Directors</p>
9:30 am	<p>States' microbial discussion, part 1</p> <p>State discussion:</p> <ol style="list-style-type: none"> <li>How do states handle significant line breaks and other significant disruptions in the distribution?</li> <li>How is a depressurization defined?</li> <li>What are the policies for sampling (CI residuals, bac-t) and issuing use advisories?</li> <li>What does maintenance of certain residuals mean in terms of distribution demand and the risk of growth in the distribution system?</li> <li>How do plumbing factors, including low water use fixtures, impact microbial risk?</li> </ol>	<p>PWSS State Directors</p> <p>Darren Lytle, EPA-Cincinnati via teleconference (to help respond to questions)</p>
10:15 am	<b>Break</b>	
10:30 am	<p>States microbial discussion, part 2</p> <p>Legionella multi-agency workgroup, status of draft agreement, and Ohio's proposed approach including states' discussion of:</p> <ol style="list-style-type: none"> <li>How are states regulating facilities treating for Legionella that would otherwise be exempt? <ul style="list-style-type: none"> <li>Regulated as PWS?</li> <li>Monitoring and operator requirements?</li> <li>Applicability of MCLs and other requirements?</li> </ul> </li> </ol>	<p>Mike Baker, OEPA</p> <p>Randy Ellingboe, MDH</p> <p>PWSS State Directors</p>

11:15 am	<p>Climate Change</p> <p>Discussion of state activities and resources needed for incorporating resiliency into our daily work (such as construction permit application revisions, review of PWS contingency plans), as well as strategies and approaches in R5. Voluntary program now—will it eventually need to be part of a regulatory program.</p> <p><i>Objective: Gain ideas for how to address issues associated with climate change</i></p>	<p>PWSS State Directors</p> <p>Others to be invited</p>
12:00 noon	Data working lunch. Lab to state data/electronic reporting	Pat Carroll, IDEM
1:00 pm	<p>Small Systems</p> <ul style="list-style-type: none"> <li>• NCWS WG update (MDH)</li> <li>• OEPA capability assurance framework (OEPA)</li> <li>• MDEQ efforts to train LHDs (MDEQ)</li> <li>• States input on new capacity development approaches for small systems</li> </ul>	<p>Jerry Smith, MDH</p> <p>Mike Baker, OEPA</p> <p>Liane Shekter Smith, MDEQ</p> <p>State PWSS Directors</p>
1:45 pm	Review follow-up items, discuss date for next year's annual meeting, recommended changes to meeting format, etc.	Tom Poy
2:00 pm	<b>End of meeting</b>	

# Survey on Lead and Copper Rule (LCR) Issues for States

## Questions about overall LCR implementation:

With many years of rule implementation behind us, how would you describe the state of LCR implementation in your state?

*Minnesota had a rough time implementing LCR due to the high number of copper action level exceedances. It took about 10 years to overcome implementation challenges and streamline enforcement processes to arrive at the current state of ease and excellence, described by EPA Region5 during 2012 data verification as “exemplary”*

What do you consider the most challenging issues you face when implementing the rule?

- 1) *Obtaining/maintaining plumbing material info and inventory*
- 2) *Sustaining sample site pools – unwilling to participate (indefinably) due to aging and other factors*
- 3) *Finding sites meeting the tier criteria -difficulty finding unsoften taps (newer installations tend to be whole-house softening without a by-pass line)*
- 4) *Evaluating Corrosion Control Treatment and setting OWQP with different types of phosphates; taking into consideration - need for iron/manganese sequestration, treatment constraints, and impacts on wastewater treatment and nutrient discharge limits*
- 5) *OWQPs designation*

What changes could EPA make in the LCR to significantly improve implementation or compliance?

*The Lead and Copper Rule in actuality is a corrosion control treatment rule, based on the assumption that when corrosion control treatment is optimized, both lead and copper levels at the taps are minimized. In Minnesota, we found this assumption to be true, we found it doesn't matter so much, whether a sample is collected from a tier1, 2, 3, or tier 4 (not a tier 1, 2, or 3) site, as long as samples are collected from sites with copper plumbing with lead solders, corrosion control treatment performance can be effectively evaluated .*

*It'll be a significant improvement in ease of rule implementation, if tier criteria barrier is removed, however, sites with lead service lines may need to be addressed differently and separately.*

What additional guidance manuals or updates to existing guidance manuals would help you in implementing the LCR in your State?

- 1) *Guidance on bio-induced corrosion control, such as copper corrosion caused by nitrification due to naturally occurring ammonia in groundwater or guidance on naturally occurring ammonia management. States including California, Florida, Illinois, Iowa, Minnesota, and Nebraska have identified and confirmed presence of Ammonia in ground water drinking sources. In a statewide General Water Chemistry Monitoring project, MDH found 70% of Minnesota community public water supply wells contain naturally occurring ammonia. Complicated by high D.O. levels in treated water resulted from iron oxidation and removal process and high ammonia levels, nitrification and copper corrosion is evident in many public water supplies. More than 170 community water systems have implemented corrosion control treatments, mostly with phosphate-based corrosion inhibitors and for copper corrosion control.*
- 2) *Current CCT guidance can be enhanced by providing more examples on copper corrosion control treatment for groundwater water supplies.*

What updates or changes to SDWIS/State could be made to help you in implementing the LCR in your State?

*Milestone reporting - we found milestone reporting confusing and burdensome without much merit. It is unclear what deem/done/undone milestones do to enhance transparency or add to LCR outcomes and measures.*

### **Questions related to Optimal Corrosion Control Treatment (OCCT):**

What elements or components are normally required in an OCCT study and what data is typically used to support the study? How long does it usually take to complete a study?

*During the initial LCR implementation in 1992-1994, all of large-size systems and medium-size systems with lead/copper action level exceedance were required to conduct OCCT study or desktop evaluation, and ultimately implemented an OCCT. The process typically took between one and two years, with treatment optimization achieved 1-3 years after CCT installation. MDH required CCT related WQP monitoring and lead/copper tap monitoring be conducted and results provided to support CCT study and evaluation, systems also required to document treatment constraints.*

*Due to the number of systems with successful OCCT implementation and experiences gained from various types of corrosion inhibitors, for more than a decade, MN Public Water Supplies tend to implement corrective options and/or install CCT within one year of an action level exceedance; OCCT study is required very infrequently, and when required, typically for precautionary reason, for the avoidance of unintended consequence caused by treatment change or process modifications.*

*MDH founds proving consultation in corrosion control treatment selection and optimization critical to CCT implementation success. Requiring systems to conduct tap monitoring and WQP*



*monitoring while evaluating CCT options also led to positive outcomes -systems get the opportunities to demonstrate treatment optimization without needing CCT or systems recognizing/accepting having a lead/copper problem and readily implemented OCCT.*

What are the major steps in your complete OCCT process? How long does it take systems to go through the steps in your process? Do systems usually complete the steps on time and what issues lead to failure to complete the process in a timely manner?

*As states previously, Minnesota Public Water Supplies tend to implement corrective options and/or install CCT within one year of an action level exceedance. MDH rarely requires OCCT study. On occasions when OCCT study is required, it is for the avoidance of unintended consequences from making treatment changes and/or process modifications.*

*It is important to note that MDH compliance engineers are made available to assist PWSs in treatment selection, evaluation, and optimization, and PWSs are required to conduct tap and WQP monitoring while evaluating CCT options. PWSs either demonstrated having an optimized treatment without CCT or accepting and addressing corrosion problem in a timely manner.*

How are Optimal Water Quality Parameters (OWQPs) selected and are there typical parameters or ranges that are designated?

*OWQPs designations are based on CCT approach, inhibitor type, severity of lead/copper corrosion, treatment constraints and/or potential for causing adverse impacts on water quality. Please note that MDH designates OWQP based on values obtained from distribution system samples.*

*When pH adjustment and/or orthophosphate corrosion inhibitor is used, systems need to have at least 90% of the distribution system pH values and/or orthophosphate residuals meeting the MDH designated minimum pH and/or orthophosphate residual value(s). Typical OWQP designation is to maintain a minimum pH at or near the pH of stability.*

*OWQP designation for systems using corrosion inhibitors vary widely, based on the performance of lead/copper reduction, corrosion control treatment consistency, treatment constraints and the likelihood of treatment causing adverse impacts on water quality (such as red water problems from high dose of poly or blended phosphate)*

*Typical OWQP for orthophosphate treatment is to maintain a minimum orthophosphate residual of 1.0 mg/L throughout the water distribution system, at all times; for treatment using a 50/50 or blended phosphates with more than 50% of Ortho, a typical given advice is to have a process in place to ensure orthophosphate residuals in the distribution systems are in the range of 0.8 to 2.0 mg/L, at all times.*

Is compliance with OWQPs a problem? How often do systems meet the OWQPs but still fail to meet the action level, and vice versa? Have you identified any incentives or tools to improve OCCT or OWQP compliance?

*Compliance with OWQP is always a problem and is the most challenging task and rule responsibility for the states. Tracking OWQP compliance and/or issuing TT violations for failing to comply with designated OWQP is problematic, in that lead/copper corrosion problem is system specific and factors affecting corruptions are dynamic; OWQP designations can be challenged and undergo reviews and revisions, creating a tracking and enforcement nightmare for the states. For the above reasons MDH, has taken a modified approach, by setting OWQP goals, devoting staff time working with PWSs on reaching and maintaining OCCT. MDH is willing to share this OWQP goal setting approach with EPA and interested states.*

The LCR lays out a fairly linear process where a system that exceeds the action level adopts a corrosion control approach that continues to operate effectively into the future. However, the initial process is seldom that straight forward and conditions are rarely constant over time. Do you consider this a major problem with the rule? What changes to the rule could be made to help states deal with reality?

See response preceding to this question

In your State, what approximate percentage of small systems that have exceeded an Action Level attempt to avoid the installation of CCT by sampling lead and copper for two consecutive 6-month monitoring periods in an attempt to return to compliance instead of installing treatment? Do you consider this provision to be a problem in implementing the LCR and are there fixes you could recommend?

*The majority of the very small systems (pop <500) will always attempt to avoid the installation of CCT, that is why MDH requires PWSs, with an A.L. exceedance, to start WQP monitoring and continue to conduct tap monitoring while evaluating CCT options, offering PWSs the opportunity to return to compliance instead of installing treatment demonstrate, by sampling lead and copper for two consecutive 6-month monitoring periods. About 70% of the systems were able to successfully demonstrate OCCT without needing treatment installation.*

*MDH does not find this approach problematic. On the contrary, systems that do have the needs for corrosion control treatment tend to move forward more quickly - seeing tap monitoring results and/or A.L. exceedance notice every 6 months seems to send the message that corrosion problem is real and need to be corrected. As a result, CCT implementation rarely takes 3 years, in most cases, installation occur within two years of exceedances.*

WDNR/R5 semiannual PWSS call; Monday, March 17, 9-10:30am

## AGENDA with draft discussion notes:

### 1. **Welcome and Introductions.** (5 minutes)

WDNR: Jill Jonas, Lee Boushon, Mary Ellen Vollbrecht, Steve Elmore

R5: Tom Poy, Rita Bair, Nick Damato, Heather Shoven, Layvette Collymore, Janet Kuefler, Miguel DelToral, Andrea Porter, Michele Palmer and Joe Janczy

### 2. **Priorities, issues or areas of focus by WDNR for CY14 and beyond.** Jill discussed the recent GAP analysis, reinvestment, and the need for more staff. RTCR will be a priority along with targeted source water protection efforts, including those related to nitrate. There will be a concerted focus to strengthen the 590 standards statewide to better protect ground water sources of drinking water. Since there are many new hires, the program will focus on training and making it a more dedicated process for staff. There is great need to simplify the complexity in our program. The Lead and Copper Rule was used as an example. Full line replacement should be made to be a viable option with expanded options for optimization.

### 3. **Priorities, issues or areas of focus by EPA for CY14 and beyond.**

- FY 2014 National Program Managers Guidance webpage-- [ HYPERLINK "[http://water.epa.gov/resource\\_performance/planning/FY-2014-National-Water-Program-Guidance.cfm](http://water.epa.gov/resource_performance/planning/FY-2014-National-Water-Program-Guidance.cfm)" ]
- RTCR and approaches to implementation at small systems, especially non-community water systems.
- Lead and Copper Rule Long-Term Revisions – need approach to get the lead pipes out.
- ETT systems and quarterly enforcement updates and referrals - WDNR is doing a good job meeting commitments and working with the Region in providing quarterly updates and referrals.
  - Problem systems, streamlining enforcement sign-off, and assessing administrative penalties for historically violating systems was also discussed.

### 4. **Issues discussed at ASDWA meeting that are applicable in Wisconsin where further state/regional collaboration may be worth pursuing.** Realism is needed about what can be done based on current/projected resources. Hesitancy continues at the national level to outwardly acknowledge resource trade-offs. WDNR expressed gratitude to the Region for being open to acknowledge trade-offs in recent years. How to address the threat from *Legionella*, and concern about an expanding PWS inventory was discussed.

### 5. **Questions or comments on the draft FY13 PWSS grant EOY and measures and indicators summaries.**

Lee questioned the statement under security, and did not commit to implementing the Region's suggestions for operator certification and capacity development program improvement. He mentioned that actions were being taken to improve performance under

both programs, and that those actions would be communicated to Region 5. Joe mentioned that there were few surprises from the 2013 measures and indicators data with the WDNR doing well in meeting its commitments. Region 5 will work to update the language under security.

6. **Nitrate trends in Wisconsin.** Mel explained the slides that were distributed showing a worsening groundwater nitrate trend in most Wisconsin counties and a particularly bad trend line for Rock County. WDNR is optimistic they will have cooperative farmers to work with in one area of the State to measure nitrogen inputs to crops and groundwater to see if nitrate increases to groundwater can be turned around. WDNR will work with DATCP to beef up practices to address N in wellhead protection areas and work with county conservation staff who are implementing the numerical P standards for run-off.
7. **Wells/distribution systems as biological reactors.** Lee discussed recent studies showing the connection between well/distribution system disintegrity, water stagnation, and biofilms with the presence of microbes, iron, manganese, phosphorus, inorganics (including lead and arsenic) and radionuclides. Based on these studies, reducing scales and biofilms will likely become an increasing goal for public water systems and needs to be reviewed in the context of the Lead and Copper Rule Long-Term Revisions.
8. **Holistic system preparedness.** Lee discussed a need for a new paradigm in public water system oversight. One in which the problems/inadequacies seen at public water systems are viewed from a collective lens rather than in trying to address each one independently. This approach would use the best professional judgment of the PWS primacy agency inspector to answer a very complex question with a simple yes or no answer—does the public water system have sufficient capacity to provide safe water now and in the future—and would emphasize incremental improvement over sophisticated planning.
9. **WI RTCR Implementation.** Steve discussed the status of RTCR preparation in Wisconsin. Draft rule language has been developed. WDNR will hold one more meeting with its advisory group. WDNR plans to use flexibility in the rule language to use large volume sampling as a way to move directly to level 2 assessments, so as to allow transient non-community water systems to remain on annual sampling. WDNR will pilot large volume sampling responses after confirmed total coliform-positives very shortly. Six WDNR staffers are being trained to use samplers developed by WSLH's Sharon Long to field test protocols for large volume sample collection. WDNR and Region 5 will continue to work together to adjust the proposal to meet primacy requirements.

FY2013 WI DNR PUBLIC WATER SYSTEM SUPERVISION PROGRAM  
WORK PLAN END-OF-YEAR REPORT  
October 1, 2012, through September 30, 2013  
*Reported as of 2/15/14*

**Contacts:**

- WI DNR Public Water Supply Section Chief – Steve Elmore, [ [HYPERLINK](mailto:Steve.Elmore@wisconsin.gov) "mailto:Steve.Elmore@wisconsin.gov" ], (608) 264-9246
- U.S. EPA Region 5 (R5) WI State Program Manager – Joe Janczy, [ [HYPERLINK](mailto:Janczy.Joseph@epa.gov) "mailto:Janczy.Joseph@epa.gov" ], (608) 267-2763

**Federal funding used:** PWSS grant; Drinking Water State Revolving Fund (DWSRF) State program management, local assistance (for capacity development and wellhead protection), and small system technical assistance set-asides; Operator Certification Expense Reimbursement grant; and Clean Water Act Section 106 funds (ground water)

NOTE: Click on the links below for summaries and more detailed information about WI's implementation of the national primary drinking water regulations (NPDWRs) or any of the activities below.

1. [ [HYPERLINK](https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015BBF6.nsf/h_Toc/a4c0568ac09b2fc5852579c700161d51/?OpenDocument)

"[https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015BBF6.nsf/h\\_Toc/a4c0568ac09b2fc5852579c700161d51/?OpenDocument](https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015BBF6.nsf/h_Toc/a4c0568ac09b2fc5852579c700161d51/?OpenDocument)"] — WI DNR implements the vast majority of NPDWRs as required, and takes actions to improve oversight to protect public health. Recent examples include:

- Instructed all labs and contracted counties to reject Total Coliform Rule (TCR) samples that are held greater than 30 hours
- Automated the generation of TCR repeat monitoring violations when extensions endure longer than 10 days
- evaluating use of the discretion to allow a non-community water system (NCWS) to operate if nitrate levels do not exceed 20 mg/L

WI DNR applied for primacy for Filter Backwash Recycling Rule (FBRR), Long-Term 2 Surface Water Treatment Rule (LT2), Ground Water Rule (GWR), Lead and Copper Rule Short-Term Revisions (LCRSTR), Stage 2 Disinfectants/Disinfection By-Products Rule (Stage 2), Variances & Exemptions (V&E), and a number of minor NPDWR revisions. R5 completed review of the GWR primacy application and the LCRSTR. Specific revisions are necessary and R5 comments have been provided. R5 expects to complete its review of the rest of the application except for minor NPDWR revisions by July 31, 2014. R5 is tracking state reporting of new rule violations (LT2, GWR, LCR, and Stage 2). As of January 2014, WI DNR had reported:

- No LT2 violations
- 335 GWR source water M/R violations
- No GWR TT or other violations
- 32 Stage 2 violations
- 382 LCRSTR consumer notification M/R violations

2. [HYPERLINK

"[https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C700157D04.nsf/h\\_Toc/9ba56cee8247ce01852579c700167798/?OpenDocument](https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C700157D04.nsf/h_Toc/9ba56cee8247ce01852579c700167798/?OpenDocument)"] – From 2010-2012, WDNR completed sanitary surveys at each WI surface water CWSs (55/55). This exceeded WDNR's negotiated target of 87% and surpassed the 95% national target. As of December 31, 2012, a sanitary survey must be conducted at each ground water CWSs every three years. For 2011-2013, WDNR reports being close to meeting this requirement (98.9% as of 12/17/13). WDNR expanded the county contract program, helping WDNR meet frequency requirements at transient non-community water systems. WDNR reports active review of the sanitary survey program both internally and with contracted counties. WDNR is taking steps to stabilize recent staff turnover.

3. [HYPERLINK

"[https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70016055A.nsf/h\\_Toc/50a7a2f7c68b0990852579c7001671af/?OpenDocument](https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70016055A.nsf/h_Toc/50a7a2f7c68b0990852579c7001671af/?OpenDocument)"] — The state is meeting expectations because: (1) USEPA-Region 5 maintains certification for the Wisconsin State Laboratory of Hygiene, (2) the program uses direct certification and reciprocal agreements to certify commercial labs within the state, and (3) a process for ensuring capacity to analyze at the principal state lab or commercial labs all NPDWR parameters that are required to be sampled in the state is maintained. Laboratory certification responsibilities in Wisconsin are split between the WI DNR (chemicals), and WI DATCP (micro).

WI DNR will certify laboratories for radionuclides and asbestos in 2014 based on the laboratories' accreditation by the National Laboratory Accreditation Program (NELAP). The Wisconsin Department of Agriculture, Trade, and Consumer Protection (WDATCP) will certify laboratories for *Cryptosporidium*.

4. [HYPERLINK

"[https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015D26C.nsf/h\\_Toc/d247c4442932350b852579c700165c4b/?OpenDocument](https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015D26C.nsf/h_Toc/d247c4442932350b852579c700165c4b/?OpenDocument)"]—WI DNR ensures public water systems regain compliance with NPDWRs. R5 tracks state commitments under measure SDWA02 and updates WI DNR quarterly. WI DNR met their SDWA O2 measure commitments, tightened enforcement of the TCR, and commits to full PN, CCR and lead consumer notification enforcement beginning in 2014. WI DNR is collecting monthly operating report information electronically from PWSs. This will assist them in determining compliance with the operation and maintenance requirements at public water systems that treat drinking water and are required to monitor treatment performance.

5. [HYPERLINK

"[https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C700159C89.nsf/h\\_Toc/f773ba3fde21dac7852579c7001641c9/?OpenDocument](https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C700159C89.nsf/h_Toc/f773ba3fde21dac7852579c7001641c9/?OpenDocument)"]— WI DNR maintains a data management system that tracks requirements for all rules and serves as the central store of data reported by laboratories, field offices and County Health Departments. WI DNR uses FedRep 3.2, but needs to upgrade to 3.4, to report TT and "other" violations to EPA. WI DNR anticipates having FedRep 3.4 in place to report missing violation categories by the May 2014 submittal. R5 is very impressed with WI DNR's exceptional timeliness of reporting TCR and nitrate violations to SDWIS/FED.

6. Security – The State of Wisconsin is expected to adopt and implement an adequate plan for the provision of safe drinking water under emergency circumstances including, but not limited to, earthquakes, floods, hurricanes, and other natural disasters. R5 will review state emergency plans and consult with the state on implementation capabilities.

7. [ HYPERLINK

"[https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C700158EB5.nsf/h\\_Toc/919b620e10f28d06852579c7001669e9/?OpenDocument](https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C700158EB5.nsf/h_Toc/919b620e10f28d06852579c7001669e9/?OpenDocument)" ] —WI DNR keeps water operators certified and ensures at least one certified operator at CWSs and NTNCWSs. Pass rates for municipal waterworks operators indicate exams are challenging. Wisconsin offers many opportunities for water system operation education to attain continuing education credits. It would be useful for WI DNR to track the number of water systems that maintain at least one certified operator at the appropriate subclass level for that water system in future reports.

8. [ HYPERLINK

"[https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C700158751.nsf/h\\_Toc/b64a188dd87b1337852579c70016637d/?OpenDocument](https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C700158751.nsf/h_Toc/b64a188dd87b1337852579c70016637d/?OpenDocument)" ] —WI DNR ensures that new and existing CWSs/NTNCWSs can demonstrate technical, managerial, and financial capacity to operate in compliance with federal and state regulations. WI DNR provided documentation to R5 showing ongoing implementation.

Twenty-six percent of WI water systems that began operation as CWSs or NTNCWSs in the 2011-2013 period (n=84), incurred monitoring, operator certification, lead consumer notification, and/or public notification violations in the same three year period.

R5 recommends WI DNR review its new systems program in order to determine if problems with non-compliance are related to the speed of initial contact with the new system or if violations occur after initial contact. Region 5 suggests tracking the speed of initial contact periodically as an indicator of new system program performance. We suggest WI DNR increase focus on new systems in its approaches to implement the operator certification program and/or technical assistance contracts.

9. [HYPERLINK

"[https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015F083.nsf/h\\_Toc/383d4a88413b802e852579c700167d85/?OpenDocument](https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015F083.nsf/h_Toc/383d4a88413b802e852579c700167d85/?OpenDocument)" ] —WI DNR reported the number of CWSs with source water protection (SWP) plans and the number of CWSs implementing SWP measures (electronically via SDWIS, if possible) as of June 30 by August 15. For FY13, WI DNR reports minimizing risk through source water protection at 15% of WI CWSs and 16% of the CWS population, exceeding their targets of 13% and 14% respectively. WI DNR 2013 highlights include—

- Adopted a strategy for selecting PWSs for intensive WHP planning and implementation assistance.
- Coordinated with USDA-NRCS to select NWQI subwatersheds with 3-4 PWSs approaching unsafe levels of nitrate
- Sought agricultural producer collaborators in Sauk County to implement a nitrate demonstration project.

- Collaborated with the WI Dept of Health Services on an interim Health Advisory Level for molybdenum.
- Presented a heat exchange drilling rule for Natural Resource Board adoption.
- For selected regulated CAFOs, worked to develop groundwater modeling and monitoring approach to evaluate potential environmental impacts and to facilitate compliance with groundwater standards.

#### 10. [HYPERLINK

"[https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015F8CA.nsf/h\\_Toc/dd322cac7ab97ca852579c7001687eb/?OpenDocument](https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015F8CA.nsf/h_Toc/dd322cac7ab97ca852579c7001687eb/?OpenDocument)"] —There are multiple national measures in the national program manager guidance that support the “water safe to drink” subobjective 2.1.1 in EPA’s strategic plan. R5 is also tracking several other measures, including those in the logic model reporting tool, regional shared goals, and regional high priority queries. The most recent data for Wisconsin for each of these measures are available via the “measures and indicators” link, some of which have been described above in this work plan summary.

Other highlights include:

- WDNR responds quickly to Tier 1 and Tier 2 violations (from indicator 18)
- WDNR reduced down from 77 to 0 the number of Tier 3 violations reported to SDWIS that endured greater than 4 years before returning-to-compliance (from indicator 19)
- Active systems with arsenic violations were reduced from 7 in FY11 to 3 in FY13 (from indicator 27)
- The overall number of M/R violations went up mainly because of LCR consumer notification (from indicators 13.4 and 21)
- One arsenic MCL violation at a school endured > 4 years before returning to compliance (from indicator 19)
- The percentage of Tier 3 violations in the “>365 days” response time category grew to 13.61% in the 2008-2012 period as compared to 7.34% in the 2004-2008 period (from indicator 18)

11. Resources and expertise —WI DNR maintains a baseline core of individuals with the technical expertise to carry out all mandatory components of the PWSS Program (including engineering plan and specification review and emergency response) . Contracts with third parties conducting mandatory components of the PWSS Program will make performance expectations clear, and will be measured and evaluated by the Department. WI DNR uses the *State Drinking Water Program Resource Needs Report & Recommendations* to develop and implement a plan to provide adequate funding to carry out all functions of the PWSS program. R5 to track progress related to state and EPA efforts to obtain additional resources necessary to enable WI DNR to engage in resolving program discrepancies.



***WDNR acknowledges the following disinvestments from its primary responsibility to implement and enforce National Primary Drinking Water Regulations (NPDWR) during the October 2014 to September 2016 timeframe.***

***1. Reporting Treatment Technique (TT) Violations for the Ground Water Rule (GWR) and Disinfectants/Disinfection By-Products (D/DBPR) Rules***

40 CFR Part 142.15 requires the WDNR to report PWS violations to EPA every quarter. To report GWR and D/DBPR TT violations, WDNR must upgrade to the latest version of FedRep, version 3.4. As of July 2014, WDNR is in the process of upgrading its reporting capability to include FedRep 3.4. This disinvestment will likely be resolved before the start date for the WI EnPPA workplan. If so, it will be struck from this document.

***2. Correcting Errors in State Code Analogs to the GWR, Stage 2 D/DBPR and the Lead and Copper Rule Short-Term Revisions (LCRSTR)***

In 2011, WDNR submitted to EPA for review primacy applications for the GWR, Stage 2 D/DBPR, LCRSTR, Filter Backwash Recycling Rule, Long-Term 2 Enhanced Surface Water Treatment Rule, the Variances and Exemptions Rule and other minor rule revisions. EPA completed the review of the GWR, Stage 2 D/DBPR and LCRSTR and provided correspondence to WDNR identifying a number of areas where corrections and clarifications needed to be made.

WDNR reviewed the EPA comments for the WI GWR primacy application and agreed to make the changes at the next available opportunity for revising the rule. They also reviewed EPA comments for the WI LCRSTR primacy application and anticipated making the requested changes by April 2016. WDNR agrees to refer cases to EPA when their current lack of regulatory authority precludes them from enforcing specific provisions.

If other rule packages submitted to EPA for review also need correcting, they will be added here for tracking purposes.

***3. Sanitary Surveys and Monitoring Schedules for Non-Community Water Systems (NCWS)***

Under 40 CFR Part 141.21(a)(3)(i), a NCWS serving 1,000 persons or fewer must monitor each calendar quarter that the system provides water to the public, except that the WDNR may reduce this monitoring frequency, in writing, if a sanitary survey shows that the system is free of sanitary defects. The WDNR cannot reduce the monitoring frequency for these systems to less than once/year. 40 CFR Part 142.16(o)(2)(i) requires the State to conduct sanitary surveys at NCWSs every five years.

Approximately 80% of the 10,000-plus Wisconsin NCWSs are allowed by the WDNR to monitor once/year. NCWSs assigned annual monitoring schedules by WDNR should be given quarterly schedules when sanitary surveys are not conducted at proper intervals to show that the system is free of sanitary defects.

WDNR does not commit to assign and report NCWS monitoring violations that occur when annual requirements change to quarterly because a sanitary survey is not updated within 5 years. WDNR management tracks the status of sanitary survey completion every quarter. According to the April 2014 Sanitary Survey Completeness High Priority Query, sanitary surveys were not conducted at 23 of the 9,665 (0.2%) WI NCWSs by the WDNR in the 2009 - 2013 five-year period.

#### 4. Consumer Confidence Report (CCR) Delivery

40 CFR Part 141.152(b) requires existing WI community water systems (CWS) to deliver CCRs to its customers by July 1<sup>st</sup> annually. 40 CFR Part 141.155(c) requires existing CWSs to mail a copy to the WDNR no later than July 1st, followed by a certification October 1st.

WDNR does not determine a reporting violation if it receives a copy of the CCR by July 10<sup>th</sup> or a copy of the certification by October 10<sup>th</sup> to allow for postal delivery. The USEPA Office of Ground Water and Drinking Water has indicated in *File Reviews* conducted in other states that WDNR should determine a violation if they do not receive the copy of the CCR by July 1 or a copy of the certification by October 1.

WI DNR DRINKING WATER AND GROUNDWATER PROGRAM  
EnPPA WORKPLAN SUMMARY  
October 1, 2014, through September 30, 2016

**Contacts:**

- WI DNR Public Water Supply Section Chief – Steve Elmore, [ [HYPERLINK "mailto:Steve.Elmore@wisconsin.gov"](mailto:Steve.Elmore@wisconsin.gov) ], (608) 264-9246
- U.S. EPA Region 5 (R5) WI State Program Manager – Joe Janczy, [ [HYPERLINK "mailto:Janczy.Joseph@epa.gov"](mailto:Janczy.Joseph@epa.gov) ], (608) 267-2763

**Federal funding used:** PWSS grant; Drinking Water State Revolving Fund (DWSRF) State program management, local assistance (for capacity development and wellhead protection), and small system technical assistance set-asides; and Clean Water Act Section 106 funds (ground water)

NOTE: Click on the links below to connect to a password protected website for summaries and more detailed information about WI implementation of the national primary drinking water regulations (NPDWRs) or any of the activities below.

For access, contact Joe Janczy.

1. [ [HYPERLINK](https://epa.qpx.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015BBF6.nsf/h_Toc/a4c0568ac09b2fc5852579c700161d51/?OpenDocument)

"[https://epa.qpx.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015BBF6.nsf/h\\_Toc/a4c0568ac09b2fc5852579c700161d51/?OpenDocument](https://epa.qpx.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015BBF6.nsf/h_Toc/a4c0568ac09b2fc5852579c700161d51/?OpenDocument)"] — WI DNR implements NPDWRs as required and prepares for implementation of the Revised Total Coliform Rule (RTCR). WI DNR will submit a final RTCR primacy revision package to R5 or an approvable extension request by February 13, 2015.

WI DNR applied for primacy for the Filter Backwash Recycling Rule (FBRR), Long-Term 2 Surface Water Treatment Rule, Ground Water Rule, Lead and Copper Rule Short-Term Revisions, Stage 2 Disinfectants/Disinfection By-Products Rule, Variances & Exemptions, and a number of minor NPDWR revisions.

Issues to resolve – Complete specific revisions to Wisconsin Administrative Code NR 809 that are identified during primacy application review and resubmit corrections to R5. R5 expects to complete its review of the entire application except for minor NPDWR revisions by February, 2016.

Performance measures – SDW-2.1.1, SDW-SP1.N11, SDW-SP2, and the status of primacy application corrections provided to R5.

2. [HYPERLINK

"https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C700157D04.nsf/h\_Toc/9ba56cee8247ce01852579c700167798/?OpenDocument"] – WI DNR maintains staff with the technical expertise needed to perform sanitary surveys. WI DNR ensures that sanitary surveys are conducted periodically that meet frequency requirements specified by rule. For TNs in contracted counties, WI DNR must manage and continue to evaluate the performance of sanitary surveys conducted by county health departments by reviewing the extent to which significant deficiencies are being identified, and whether frequency requirements are being met. R5 tracks state commitments to conduct sanitary surveys within the federally required intervals.

Performance measure – SDW-01a.

3. [HYPERLINK

"https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70016055A.nsf/h\_Toc/50a7a2f7c68b0990852579c7001671af/?OpenDocument"] — WI will:

- Maintain certification for the WI State Lab of Hygiene.
- Provide an adequate lab certification program for all regulated contaminants. This does not mean that WI must expand its laboratories to perform all the analyses. At a minimum, WI should have an adequate certification program to certify commercial labs within WI.
- Maintain a process for ensuring lab capacity to analyze all NPDWR parameters that are required to be sampled in WI.

4. [HYPERLINK

"https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015D26C.nsf/h\_Toc/d247c4442932350b852579c700165c4b/?OpenDocument"]—WI DNR will evaluate compliance with all NPDWRs, and respond to violations by providing compliance assistance or enforcement as appropriate. Keep adequate records of pertinent state decisions. R5 continues to look to WI DNR to refer noncompliant PWSs.

Performance measure – SDW-02.

5. [HYPERLINK

"https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C700159C89.nsf/h\_Toc/f773ba3fde21dac7852579c7001641c9/?OpenDocument"]— WI DNR will maintain a database which tracks public water systems inventory, actions and violations for all federal rules. Wisconsin will update to the most recent version of FedRep as new releases are made, conduct timely reporting on a quarterly basis to Region 5, and correct any reporting errors as soon as possible.

Performance measures – status of upgrade to FedRep 3.4, status of EMOR violation alert capability, status of reporting violations for newer NPDWRs, and % TCR and nitrate violations reported on-time.

6. Security – WI DNR is expected to adopt and implement an adequate plan for the provision of safe drinking water under emergency circumstances including, but not limited to, earthquakes, floods, hurricanes, and other natural disasters. R5 will review state emergency plans and consult with the state on implementation capabilities.

7. [ HYPERLINK

"[https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C700158EB5.nsf/h\\_Toc/919b620e10f28d06852579c7001669e9/?OpenDocument](https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C700158EB5.nsf/h_Toc/919b620e10f28d06852579c7001669e9/?OpenDocument)" ] — WI will establish and implement minimum professional standards for the operation and maintenance of public water systems to ensure that properly trained and certified professionals are overseeing the treatment and distribution of safe drinking water and to promote compliance. WI DNR will provide documentation to USEPA showing the ongoing implementation of the program to avoid 20% withholding of the DWSRF grant, due on September 30<sup>th</sup> annually. Annual reports must include operator certification reporting measures.

For operators of CWS and NTNCWS: WI will provide training and certification opportunities for new operators and for operators upgrading and renewing certification, including training to ensure sustainable water utilities and supplies.

Performance measure - % of required PWSs that have at least one certified operator.

8. [ HYPERLINK

"[https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C700158751.nsf/h\\_Toc/b64a188dd87b1337852579c70016637d/?OpenDocument](https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C700158751.nsf/h_Toc/b64a188dd87b1337852579c70016637d/?OpenDocument)" ] — WI DNR ensures that new and existing CWSs/NTNCWSs can demonstrate technical, managerial, and financial capacity to operate in compliance with federal and state regulations. By December 31<sup>st</sup>, WI DNR provides documentation annually to R5 showing ongoing implementation. WI DNR submits a report to the governor and provides a copy to EPA on the efficacy of the strategy and the progress made toward improving the capacity of water systems in the state by October 1, 2014.

Performance measure - # and % of CWS and NTNCWS that began operation in the least three years that incurred monitoring, operator certification, lead consumer notification, and/or public notification violations in the same three year period.

9. [HYPERLINK

"[https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015F083.nsf/h\\_Toc/383d4a88413b802e852579c700167d85/?OpenDocument](https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015F083.nsf/h_Toc/383d4a88413b802e852579c700167d85/?OpenDocument)" ] — WI DNR will support public water systems who initiate source water protection (SWP) activities. They will ensure new wells/intakes have SWP plans submitted during plan review. WI DNR will target specific PWSs for more intensive SWP activity, especially to keep nitrate and VOCs below MCLs. They will educate the public and coordinate with local, state and federal agencies about groundwater concerns and studies. WDNR will annually report the number of CWSs with SWP plans and the number of CWSs implementing SWP measures (electronically via SDWIS, if possible) as of June 30 by August 15.

Performance measures – SDW-SP4a and b

10. [HYPERLINK

"[https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015F8CA.nsf/h\\_Toc/dd322cac7ab97ca852579c7001687eb/?OpenDocument](https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015F8CA.nsf/h_Toc/dd322cac7ab97ca852579c7001687eb/?OpenDocument)" ] — There are multiple national measures in the national program manager guidance that support the “water safe to

drink” subobjective 2.1.1 in EPA’s strategic plan. Besides the performance measures listed in this document, R5 also tracks several other measures, including those in the logic model reporting tool, regional shared goals, and regional high priority queries. The most recent data for Wisconsin for each of these measures are available via the “measures and indicators” link to the password protected website.

11. Resources and expertise —WI DNR maintains a baseline core of individuals with the technical expertise to carry out all mandatory components of the PWSS Program (including engineering plan and specification review and emergency response) . Contracts with third parties conducting mandatory components of the PWSS Program will make performance expectations clear, and will be measured and evaluated by the Department. WI DNR uses the *State Drinking Water Program Resource Needs Report & Recommendations* to develop and implement a plan to provide adequate funding to carry out all functions of the PWSS program. R5 to track progress related to state and EPA efforts to obtain additional resources necessary to enable WI DNR to resolve temporary program disinvestments expeditiously.

All three presentations I saw today hammered the same point – we need to stabilize the microbial condition of our wells and distribution systems because biofilms interact with metals that cause uncontrolled releases of a wide variety of contaminants, and cause pipes to deteriorate faster than they should.

## Presentation #1 -

**Andrew Jacque** Ex. 6 Personal Privacy (PP) [[HYPERLINK "mailto:ajacque@tcengineers.net"](mailto:ajacque@tcengineers.net) ],

Ex. 6 Personal Privacy (PP)

**Town and Country Engineering**

**Water Quality Investigations**

Andy's presentation was all about variable well water quality. He showed several slides showing the changing color condition of drinking water collected from the same well the longer the pump ran. Color has a positive association with microbes, which is to say that having metals like iron or manganese is connected with microbes. When iron and manganese are present, so are other metals like Pb, Cu, As and Ra, because the microbes help mobilize the metals.

The microbes he finds often are not pathogens but common soil microbes like *gallionella*. Microbes create biofilms that slough off and is collected in samples. He showed that the upper strata of wells are often contaminated with microbes, biofilm and metals. All contaminant levels drop with pumping time.

There are lots of microbes growing in pipe tubercles. He showed pictures and said microbes are eating away the inside steel casing and copper pipe when they get a chance to seed themselves through some pipe or casing disintegrity that allows them in. The biofilms increase chlorine demand and DBP formation.

Microbes in the well and distribution system are opportunistically looking for something to eat so they can reproduce. He believes that adding blended phosphates add nutrients for the microbes which cause them to eat it rather than the pipe. This has the effect of reducing pipe corrosion but you have to keep adding the nutrient for it to work. The much better solution is to keep the biofilm and microbes out of the well through proper siting, construction, maintenance and ongoing, periodic disinfection.

He uses a suite of analyses when studying the condition of a well which includes electrochemistry, pH, oxidation/reduction potential (ORP), conductivity, dissolved oxygen, nitrate, turbidity, combined dissolved organic matter (CDOM), chlorine residual, etc. These parameters are not required to be studied by regulations, but they help explain what's going on. He considers this kind of an EKG for wells.

Ammonia oxidizers are in biofilms which causes nitrates to increase. Biofilms are not uniform and you can have different kinds attacking different portions of casing/pipe. Spikey patterns tell you have microbes in wells. He has worked with Microbe Detectives to do DNA testing to confirm this.

When wells are drilled down into the Precambrian surface or to an aquitard like the makoqueta shale, this can cause well contamination because microbes/metals sink to these areas and concentrate. The wells take them up when they pump and then become contaminated.

Siting wells are very important to water quality and it is important to know where the water will come from. He gave a couple of examples where events that were occurring nearby would affect drinking water that is collected from a well in an aquifer downgradient from the problem on the surface.

Jacques explained why adenosine triphosphate (ATP) screens are much better at capturing the microbial condition of wells than is heterotrophic plate count (HPC). ATP looks for everything and captures all organisms on the surface of the filter. HPC only counts iron eaters, which are only a small fraction of what's out there affecting overall water quality.

Some of the source problems that lead to lead problems include faulty casing or grout seal, karst features, preferential flow regimes (Precambrian and makoqueta examples), and faults of fractures. Investigate the entirety of the well to see if any particular areas within it are creating the problem and isolate the area to improve water quality.

There are some situations where well rehab will not work because the poor water quality exists in the aquifer, not just in the well. He estimates this to be true in 10-20% of wells that are having WQ problems. In most situations, well rehab is an option that can solve the problem and be less costly than well abandonment.

How to control microbes in well?

Study microbial occurrence. Find out why they are there and understand what they want. Remove them through both chemical and physical cleansing.

Perform rehab and maintenance. He talked about the need to recycle water that stagnates above the pump. Run well at least 1 hour/day. Provide periodic chlorination, shock chlorination or chemical feed to well. Monitor presence with ATP test. Treat water if necessary.

Drinking water regs are the bare minimum. If water suppliers really want to protect public health and their investments, they need a multidisciplinary approach to solve groundwater related problems.

Stand-by wells are very problematic from the standpoint of growing microbes.



## Presentation #2 - Abigail Cantor

Pipe scales form by three mechanisms...

- Byproducts of uniform corrosion of metals
- Precipitated chemical scales
- Biofilms

There's a flow of electrons, anode to cathode with water the electrolyte.

The new compound that is formed determines whether the corrosion will continue. Insoluble by-products form on the pipe. Ortho phosphate has very low solubility.

Iron and manganese can adsorb other metals and keep them on the pipe. Madison lead problems were caused by manganese scales on pipe walls. Where there was no manganese source from the aquifer Madison had a highly insoluble lead/oxygen compound. Where manganese was present there were erratic releases from vibrations/disruptions which caused stored metals to be delivered to taps.

In another community, a lead/phosphate compound was trapped in aluminum scale and this sloughed off to consumer taps. Changes in pH/temp can redissolve compounds.

Nutrients (C, N, P) and conditions (water age, low points in pipe, high surface area) help to promote the potential to grow microorganisms. Biofilms are acidic

MIC – microbiologically influenced corrosion is a heavy influence on water quality. Lead is affected by MIC but not to the extent that copper and iron are. Polyphosphates bring metals in and can feed the microbes. Should not be used. Orthophosphate works but may not be needed (overmedicating water systems). Biologically stable water might work just as good. She is promoting lead line replacement. Get on a schedule to remove them.

Calcium carbonate does not create protective scales. It's coarse and non-uniform. Electrons still get through.

Iron and manganese are warning symbols. Tubercles are influencing the lead and copper in old city's water systems.

Need a strategic plan for monitoring that uses existing data, pipe scale analysis, parameters for byproducts of uniform corrosion of metals, parameters for precipitating chemical scales, parameters for biostability, and they should reflect water quality at consumer taps to reflect what they drink.

She does not think coupon testing is appropriate for drinking water applications. Should be restricted to process or industrial applications, because weighing a piece of metal tells us nothing.

When making changes to chemicals it should be done so very slowly and with monitoring. Should try to clean systems to achieve biologically stable water, then ponder uniform corrosion. The focus goes beyond lead and copper.

Dissolved inorganic carbonate is somewhat synonymous with alkalinity. High alkalinity should track with high lead, but she gives examples where it didn't track in real-life cases. Other factors like MIC, manganese, iron, and glacial sediment were at work.

She produced a brochure that you can download from her website called "what's bugging your pipes" which talks about how to install and maintain plumbing in buildings to keep microbes from inoculating your residential water.

Unidirectional flushing along with disinfection is very important for overall microbial control. Clean the wells, clean the pipes, and keep the iron and manganese out.

### **Presentation #3 - Brian Henry, Technical Applications Specialist, Water Treatment Specialties Group**

**Hawkins**

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**Personal Phone / Ex. 6**

[ HYPERLINK "mailto:Brian.henry@hawkinsinc.com" ]

[ HYPERLINK "http://www.hawkinsinc.com" ]

Clearitas was called Reox in 1996.

3 ingredients – high purity salt, high purity water, and a stabilizing solution. It's a mixed oxidant, very similar to what is produced in a miox system, but with a longer shelf life (over 6 months).

It's an advanced electrocatalytic chlor-alkali process (Patent # 8,518,270)

How do you tell when it's out of the system? Test the chlorine content to tell it is broken down.

.05% chlorine content out of the box. pH 7.5-9.5.

Feeding at low dose – 2-4 up to 10 ppm

Clearitas 101 is for the municipal water market and is NSF approved up to 4,000 ppm.

It's not a primary or secondary disinfectant. It helps to chemically release scale from pipe. Allows chlorine to destroy the glue holding the particulate to the pipe.

It is recommended when there is loss of disinfectant residual in the distribution system.  
There are dirty water complaints or reduced flow due to iron or manganese deposits.  
There are problems with DBPs in the distribution system, due to biofilm in the distribution system.

Not recommended in reducing calcium carbonate scale.

80 customers in SD, IL, OK, WI, IN, AR, IA, ND, MT, three in WI

Mukwanago  
Random Lake  
Schoefield

Alternatives are miox machine, onsite chlorine, chlorine dioxide, chlorine dioxide two part mixes, stabilized chlorine dioxide, overfeeding poly phosphates, pipe replacement, pigging lines.

Did study in Cloquet, MN with MDH. 6 months of low dose feed. Has data that shows it works. The trick is to raise the exposure to released contaminants slowly so that MCLs, water quality complaints are not exceeded, but then stability is achieved and maintenance doses do the job for the long run.

Turbidity and UV testing are great ways to track releases. Average feed rates are between 2-10 ppm to begin and adjusted to customer complaints, water quality data and visual inspections.

Similar chemistry to low strength bleach with regards to storage and containment.  
.05-.5 maintenance dose after stability is achieved.

Wisconsin Rural Water Association  
Statewide Drinking Water Critical Training Needs Collaborative Workshop  
3 June 2014

## **WI DNR—priority training & technical assistance needs**

### **REGULATORY TOPICS**

#### **Highest priority for training (ordered with highest importance first):**

- **Cross connections (NNs and OTMs) and Cross-Connection Control programs (MC)** – details of what constitutes a cross-connection, identification, installing protection, etc.
- **Monitoring Site Plans**—review requirements and importance of keeping plans updated. For OTM systems, this is a problem area for compliance (see top deficiencies).
- **Revised Total Coliform Rule (RTCR) for seasonal systems** – seasonal system startup procedures and certification.
- **NR 810 revisions of 2010**—review/update of the 2010 changes to NR 810, specifically local well permitting program (NR 810.16), storage tank inspection procedures (NR 810.14)
- **Level 1 assessments**—educate water system operators on performing correctly, data to keep track of, how to complete (MC systems).

#### **Lower priority for training:**

- **NR 812 revisions**—review of 2014 changes to NR 812 (NN systems).
- **Emergency Operations Plans**—review requirements and importance of keeping plans updated. This is a problem area for compliance (MC, OTM systems; also NN systems with >10 employees; see top deficiencies).

#### **Priorities for technical assistance (ordered with highest importance first):**

- **Lead and copper rule**—public notice/notification and certification requirements continue to be a problem area for compliance.
- **Consumer Confidence Reports**—conduct targeted training/technical assistance activities during spring (March-June) to assist water system personnel, especially for OTM systems, with CCR preparation. Group sessions with computers available, and where each attendee could work on preparing their system's CCR during the session, would be especially valuable.

### **OPERATIONAL TOPICS**

#### **Highest priority for training (ordered with highest importance first):**

- **O&M issues**—the lists of top deficiencies at all MC, OTM and NN systems indicate an ongoing need for increased training on O&M topics related to wells, pumps, storage facilities, piping, valves and sample faucets, distribution system cleaning, minimizing corrosion, winter operations, flooding considerations, and drought response.
- **Sampling protocols**—there is an ongoing need for training/technical assistance related to proper sample collection protocols.
- **Chemistry testing**—review/train water system personnel on proper methods for chemistry tests, e.g., pH, residual chlorine, turbidity, hardness, etc. (MC systems).
- **Nitrates**—review/train water system personnel on approaches for preventing exceedances and responding to rising nitrate concentrations.

- **Emergency preparedness**—updating plans, developing action sheets, ICS training, including flood, freezing, and drought in emergency plans.

**Lower priority for training:**

- **Water system security**—review/train water system personnel on things to look out for, monitoring with SCADA systems, and proper cyber security for SCADA systems.

**Highest priority for technical assistance:**

- **O&M issues**—the lists of top deficiencies at all MC, OTM and NN systems indicate an ongoing need for increased training on O&M topics related to wells, pumps, storage facilities, piping, valves and sample faucets, distribution system cleaning, and minimizing corrosion.

**TECHNICAL TOPICS**

**Highest priority for training (ordered with highest importance first):**

- **Catalog of topical lessons**—having a catalog of short, informative lessons available online would help to satisfy an ongoing need for information about correct sampling protocols and many other subjects. The lessons could be brief demonstration videos to help train new water system personnel and refresh experienced personnel on sampling that isn't conducted very often.

**Lower priority for training:**

- **Basic computing for water system personnel**—there may still be a need for training among small system personnel now that reporting is increasingly done electronically; this may be true especially for OTM personnel.

## Top deficiencies from sanitary surveys conducted during calendar year 2013

### MUNICIPAL SYSTEMS

Rank	MC - Survey Questions	Total
1	System is not implementing a comprehensive Cross-Connection Control Program.	49
2	System is not implementing a comprehensive Private Well Abandonment / Permitting Program.	33
3	Water storage facilities are not inspected frequently enough.	29
4	A current, adequate, distribution system map is not available or a copy of the map is not on file with the Department.	28
5	System is not maintaining and practicing a comprehensive Emergency Operations Plan.	27
6	The required valves and/or appurtenances are not installed in the well discharge piping.	21
7	System is not capable of achieving a free chlorine residual of 0.5 ppm throughout the entire distribution network in 4 hours.	18
8	The system is not exercising their auxiliary power (testing once a month, quarterly under full load) and keeping a log book.	16
9	All water mains are not at least 6 inches in diameter.	13
9	Overflows of elevated storages are not provided with a sufficient 4 mesh non corrodible screen and/or ground level overflows are not provided with a sufficient 24 mesh noncorrodible screen.	13

## OTM SYSTEMS

Rank	OTM Survey Questions	Total
1	Updated bacteria and/or lead and copper and/or disinfection byproduct monitoring plans are not on file with the DNR.	19
2	System is not maintaining and practicing a comprehensive Emergency Operations Plan.	15
3	The condition of the pump facility(ies) is not satisfactory.	13
4	A cross-connection(s) to a potential contamination source(s) exists.	12
5	The discharge piping and/or appurtenances do not meet NR 811 requirements.	10
6	Water Storage facilities are not inspected at least once every 5 years.	9
6	Source(s) are not adequately protected from unauthorized access.	9
8	The pump facility(ies) do not meet NR 811 requirements.	7
8	The discharge type and/or appurtenances are not appropriate for the system.	7
10	Sampling faucets and/or faucet locations are not appropriate for each type of sample.	6
10	Past inspection deficiencies have not been corrected as required.	6

## NN SYSTEMS

Rank	NN Survey Questions	Total
1	A cross-connection(s) to a potential contamination source(s) exists.	48
2	The raw water sample tap(s) is not code complying.	28
3	Openings through the well cap are not adequately sealed.	25
4	Updated bacteria and/or lead and copper and/or disinfection byproduct monitoring plans are not on file with the DNR.	14
5	The discharge piping and/or appurtenances do not meet NR 812 requirements.	9
6	The well is not adequately separated from contaminant sources.	6
6	The system does not have a certified operator.	6
8	Unused wells are not properly abandoned.	5
8	The finished well height is not adequate.	5
8	The pump facility(ies) do not meet NR 812 requirements.	5
8	O & M of the storage facility(ies) is not appropriate.	5





*U.S. Environmental Protection Agency*  
**NDWAC LEAD AND COPPER WORKING GROUP**

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703.247.6161

*September 18-19, 2014*

*Agenda*

Meeting Objectives/Desired Outcomes:

- Welcome new members;
- Approve May meeting summary;
- Share follow up ideas and questions concerning webinars;
- Provide input on what cost effective sampling protocols that achieve public health improvement might look like;
- Provide input on questions related to public education; and
- Plan next steps.

Advance materials: LCR White Paper; Sampling and Public Education Primers

Thursday September 18<sup>th</sup>, 2014

8:45-9:00      Informal gathering

9:00-9:45      Welcome, Introductions, Meeting Objectives/Agenda, Materials and Logistics, and Approve May Meeting Summary

*Advance materials: Proposed agenda, May meeting summary*

Welcome: Eric Burneson, Director, Standards and Risk Management Division,  
Office of Groundwater and Drinking Water  
Introductions: Gail Bingham, *facilitator*

9:45-10:45      Discussion: Follow up on Key Points from Webinars

*Objectives: Recap topics covered by speakers on sampling protocols and public education webinars. Address any unanswered or follow up questions. Share "take-aways."*

10:45-11:00      BREAK

11:00-12:15      Discussion: Sampling Protocols: Implications in Context of the Entire Rule

*Objectives: Provide initial input on questions posed in the white paper and on the webinar. Initial ideas will be included in the meeting summary for members to reflect upon and consider for inclusion in final report.*

*Suggested Discussion Questions: [Note: Gail call at least some NDWAC WG members to ask what questions they would like to address.]*

- What are the pros and cons of taking a first draw sample?
- What are the pros and cons of other options (from the webinar and/or as suggested by members)?

- What are the implications of shifting from first draw samples to another type of sample, such as a lead service line sample?
- What are the advantages/disadvantages of a single prescriptive liter versus a site-specific sequential sampling approach?
- What are the pros and cons of other options (from the webinar and/or as suggested by members)?
- Under what conditions could OCCT be based on the lead results from the lead service line samples?

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**Commented [GB1]:** I'm not sure I understand this question. Doesn't OCCT get triggered from the results? This is worded as if it's a change.

**Commented [MR2]:** Gail, I don't think this question is necessary with my addition to the second bullet asking about another type of sample. The idea that the question is trying to get at is that LSL samples will likely push many systems into corrosion control (which haven't yet had to do it), and will likely have many systems with CCT reoptimizing or going into LSLR. A better question would be, "What are the implications of moving to a lead service line sample?"

12:15-1:30 LUNCH [on your own]

1:30-1:45 Public Comment

1:45-3:00 Discussion: Sampling Protocols: Implementation Questions  
*Objectives: Provide initial input on questions posed in the white paper and on the webinar. Initial ideas will be included in the meeting summary for members to reflect upon and consider for inclusion in final report.*

Suggested Discussion Questions:

**Commented [MR3]:** I think these questions should go at 3:30.

- In the context of the morning discussion,
  - Who should collect samples? The PWS? The homeowner/resident? If the latter, how can the procedure be reliably executed? How can instructions to homeowners/residents be as clear and easy to follow as possible?
  - What are the pros and cons of addressing pre-stagnation flushing of pipes? How should this issue be addressed, if at all? What is the best way to represent the water in the service line?
  - Should aerator removal be addressed? If so, how?
  - What are the pros and cons of addressing pre-stagnation flushing of pipes? How should this issue be addressed, if at all? What is the best way to represent the water in the service line?

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3:15-3:30 BREAK

3:30-4:30 Discussion: Sampling Protocols: Implementation Questions [continued]  
*Objectives: Provide initial input on questions posed in the white paper and on the webinar. Initial ideas will be included in the meeting summary for members to reflect upon and consider for inclusion in final report.*

Suggested Discussion Questions:

**Commented [MR4]:** Gail, I think these questions should go at 1:45.

- What is an appropriate number of samples to be collected by a water system to capture the highest risk lead and copper sites in the distribution system and, where CCT is in place that will indicate if the corrosion control is effective in reducing lead? In reducing copper?
  - How important is the size of the PWS population in determining this number?
  - How much does geographic distribution of samples matter, particularly with respect to non-homogenous water quality and non-homogeneous construction distribution?

- What are the implications of invalidation criteria for the number of samples needed?
- What are the implications of adding a maximum residence time for tap samples?
- Other questions from the webinar?

**Commented [MR5]:** From Jeff:  
We may as well put the issue of a maximum residence time (24 hours) on the table and ask specific questions about it – we could do this in the over-arching first session or in the third session as a question just before the invalidation criteria as this is the big issue regarding invalidation. If we add it as a criterion, then it would allow samples to be invalidated if they exceed that threshold. This is something we envision including, so it would be good to get input from NDWAC WG on it. We probably don't need to include the specific 24 hours in the question on the inclusion of a maximum residence time.

4:30-5:00 Open Discussion

5:00 ADJOURN FOR THE DAY

#### Friday, September 19<sup>th</sup>, 2014

8:45-9:00 Informal gathering

9:00-9:15 Review Day Two Agenda

*Objective: Reflections from Day One and confirm agenda for today.*

9:15-10:45 Discussion: Public Education for Lead

*Objectives: Provide initial input on questions posed by NDWAC WG members or in the white paper and on during the webinar. Initial ideas will be included in the meeting summary for members to reflect upon and consider for inclusion in final report.*

*Suggested Discussion Questions: [Note: Gail will call Yanna L to ask what questions she suggests be added with respect to lead PE.]*

- ~~What are the pros and cons of the 2007 changes to lead public education?~~
- What suggestions do members have for improvement?
- Other questions from the webinar?

**Commented [MR7]:** I see where Jerry is coming from, but I disagree and would let this question stand because it will bring out the issues and let the group discuss them. Jerry's right, though, we'll know better the issues after the PE webinar.

10:45-11:00 BREAK

10:45-12:15 Discussion: Public Education for Copper

*Objectives: Provide initial input on questions posed in the white paper and on the webinar. Initial ideas will be included in the meeting summary for members to reflect upon and consider for inclusion in final report.*

*Suggested Discussion Questions:*

- Are there aesthetic warning signals of copper corrosion in drinking water and, if so, what are they and what recommendations should be given to consumers to help them avoid the health effects of copper through consumption of drinking water?
- Should copper public education materials be included in the LCR using the same basic structure as the public education materials for a lead action level exceedance?
- Should different types of outreach materials to consumers with different content be required depending on whether or not the copper action level is exceeded? If so, what information should be included (e.g., public education for an action

**Commented [EJ8]:** I think we should wait to get Yanna's issues added to the agenda before adding this question. After I know what the issues are with the existing requirements, I can provide input on what questions to ask.

level exceedance, informational statement about copper if an action level is not exceeded)?

12:15-1:30 LUNCH [*on your own*]

1:30-1:45 Public Comment

1:45-2:45

Discussion: Public Education for Copper [continued]

*Objectives: Provide initial input on questions posed in the white paper and on the webinar. Initial ideas will be included in the meeting summary for members to reflect upon and consider for inclusion in final report.*

*Suggested Discussion Questions:*

- If copper public education materials or informational statements are required, what should the delivery frequency be?
- If public education is not required for copper action level exceedances, should EPA require systems to deliver outreach materials/informational statement to consumers who visit or live in a newly/recently built or renovated building/dwelling with new copper piping?
  - Should systems be required to identify newly/recently built or renovated building/dwelling with new copper piping?
  - Should systems be required to work with local inspection services to incorporate the outreach materials or informational statement into building/dwelling occupancy permits?
  - How much and what kind of direction should be provided by EPA with respect to public education materials or informational statements?
- If a water system demonstrates water quality aggressive to copper, should those consumers receive informational statements about copper? If so, what information should be included?
- Other questions from the webinar?

2:45-3:00

Wrap up and Next Steps

3:00

ADJOURN MEETING

**Percent of Non-Transient Non-Community Water Systems Meeting ALL Health Based Standards  
CY 2006 - 2013**

**Milestone 1:** By 2016, 95% of non-transient non-community water systems receive water that meets health-based drinking water standards.

	2006 % of Systems	2007 % of Systems	2008 % of Systems	2009 % of Systems	2010 % of Systems	2011 % of Systems	2012 % of Systems	2013 % of Systems
Illinois		93.5%	93.7%	95.8%	96.0%	95.7%	96.8%	95.9%
Indiana		85.2%	86.5%	88.0%	91.2%	94.2%	93.9%	93.1%
Michigan		92.0%	91.4%	91.2%	92.2%	94.4%	94.5%	94.6%
Minnesota		95.4%	95.1%	94.8%	95.9%	98.2%	96.6%	95.8%
Ohio		84.3%	88.0%	88.6%	91.9%	91.4%	93.0%	91.8%
Wisconsin		94.7%	94.0%	94.7%	94.7%	94.0%	95.7%	94.3%
Region 5 - DI		92.3%	96.0%	100%	100%	100%	100%	100.0%
<b>TOTAL</b>		<b>90.7%</b>	<b>91.3%</b>	<b>91.9%</b>	<b>93.3%</b>	<b>94.4%</b>	<b>94.9%</b>	<b>94.2%</b>

**Percent of Transient Non-Community Water Systems Meeting ALL Health Based Standards  
CY 2006 – 2013**

***Milestone 2: By 2016, 95%% of transient non-community water systems that meet health-based drinking water standards.<sup>1</sup>***

	2006 % of Systems	2007 % of Systems	2008 % of Systems	2009 % of Systems	2010 % of Systems	2011 % of Systems	2012 % of Systems	2013 % of Systems
Illinois	98.0%	97.7%	98.6%	97.4%	97.8%	98.6%	100%	100.0%
Indiana	89.2%	88.9%	89.8%	90.5%	91.2%	92.1%	92.4%	91.0%
Michigan	96.5%	96.8%	96.6%	96.7%	96.9%	97.5%	97.6%	97.1%
Minnesota	95.2%	95.5%	95.5%	97.0%	96.3%	95.9%	96.2%	96.5%
Ohio	88.9%	92.8%	93.2%	92.4%	92.6%	92.1%	92.7%	92.1%
Wisconsin	96.8%	96.7%	96.8%	97.1%	96.4%	97.0%	97.3%	96.7%
Region 5 - DI	100%	100%	100%	100%	100%	100.0%	100.0%	100.0%
<b>TOTAL</b>	<b>95.2%</b>	<b>95.6%</b>	<b>95.8%</b>	<b>96.0%</b>	<b>95.9%</b>	<b>96.3%</b>	<b>96.7%</b>	<b>96.2%</b>

<sup>1</sup> These new targets were finalized and sent to the States 7/25/07.

**Percent of Population Served By Community Water Systems With Significant/Major Monitoring Violations  
CY 2006 - 2013**

***Milestone 3:*** *By 2016, improve drinking water system compliance so less than 5% of the population is served by community water systems have significant/major monitoring violations for all applicable rules.*

	2006 % of Population	2007 % of Population	2008 % of Population	2009 % of Population	2010 % of Population	2011 % of Population	2012 % of Population	2013 % of Population
Illinois	9.1%	10.5%	3.8%	2.4%	3.0%	1.9%	2.8%	2.7%
Indiana	22.5%	5.4%	5.5%	5.5%	3.2%	3.5%	3.9%	6.8%
Michigan	1.7%	2.9%	2.8%	0.7%	0.3%	2.6%	4.0%	13.3%
Minnesota	0.5%	2.0%	1.1%	0.3%	0.3%	0.5%	0.9%	0.7%
Ohio	4.9%	3.4%	2.9%	2.7%	4.2%	2.0%	16.2%	19.3 %
Wisconsin	28.4%	21.6%	8.1%	9.2%	1.3%	3.3%	6.2%	6.8%
Region 5 - DI	16.1%	20.7%	20.4%	15.6%	22.9%	10.2%	7.2%	2.0%
<b>TOTAL</b>	<b>9.2%</b>	<b>7.1%</b>	<b>3.8%</b>	<b>3.0%</b>	<b>2.5%</b>	<b>2.3%</b>	<b>6.4%</b>	<b>9.1%</b>

2012\*

Without the LCR Type 66 violation, consumer notification, IL is at 2.0%, IN is at 3.8%, MN is at 0.7%, OH is 15.1%, WI is at 2.0%, and TOTAL is at 5.5%. Region 5 – DI and MI percentages did not change with the exclusion of Type 66 violation.

2013\*

Without the LCR Type 66 violation, consumer notification, IL is at 2.3%, IN is at 6.5%, MI is at 13.3%, MN is at 0.6%, OH is 18.4%, WI is at 3.9%, and TOTAL is at 8.5%. Region 5 – DI percentage did not change with the exclusion of Type 66 violation.



**Percent of Community Water Systems With Significant/Major Monitoring Violations  
CY 2006 - 2013**

**Milestone 4:** By 2016, improve drinking water system compliance so less than 10% of community water systems have significant/major monitoring violations for all applicable violations.

	2006 % of Systems	2007 % of Systems	2008 % of Systems	2009 % of Systems	2010 % of Systems	2011 % of Systems	2012 % of Systems	2013 % of Systems
Illinois	13.2%	17.2%	9.5%	8.4%	11.5%	9.2%	9.5%	10.6%
Indiana	16.7%	20.8%	19.7%	18.1%	16.0%	14.1%	16.3%	17.7%
Michigan	7.4%	8.3%	6.2%	5.2%	5.2%	5.0%	7.1%	8.8%
Minnesota	4.6%	6.7%	6.1%	3.2%	2.5%	4.0%	10.2%	5.8%
Ohio	18.0%	17.4%	16.2%	12.4%	23.8%	15.3%	16.0%	20.3%
Wisconsin	12.0%	18.4%	10.6%	12.1%	8.5%	10.6%	18.7%	26.9%
Region 5 - DI	19.5%	19.5%	15.4%	10.4%	42.9%	17.7%	17.1%	3.9%
<b>TOTAL</b>	<b>12.1%</b>	<b>14.7%</b>	<b>10.9%</b>	<b>9.5%</b>	<b>11.6%</b>	<b>9.6%</b>	<b>12.4%</b>	<b>14.4%</b>

2010 - This is the first year with significant reporting of the LCR Type 66 violation, consumer notification, which contributed to the increase in IL and OH. Without those violations in comparison to previous years IL is at 8.7% and OH is 15.7%.

2011 - Without the LCR Type 66 violation, consumer notification, IL is at 6.0%, MN is at 3.9%, OH is 10.3%, WI is at 9.3%, and TOTAL is at 7.8%. IN, MI, and Region 5 – DI percentages do not change with the exclusion of Type 66 violations.

2012 - Without the LCR Type 66 violation, consumer notification, IL is at 8.4%, IN is at 15.9%, MN is at 7.8%, OH is 10.6%, WI is at 8.9%, and TOTAL is at 9.4%. MI and Region 5 – DI percentages do not change with the exclusion of Type 66 violations.

2013 - Without the LCR Type 66 violation, consumer notification, IL is at 8.1%, IN is at 13.7%, MI is at 8.4%, MN is at 5.3%, OH is 17.4%, WI is at 8.2%, and TOTAL is at 10.0%. Region 5 – DI percentage does not change with the exclusion of Type 66 violations.

**Percent of Non-Transient Non-Community Water Systems With Significant/Major  
Monitoring Violations for acute health risks  
(nitrate, microbiological, and surface water treatment)  
CY 2006 – 2013**

***Milestone 5:*** By 2016, improve drinking water system compliance so that less than 5% of non-transient non-community water systems have significant monitoring violations for acute health risks. (TCR, Nitrate, GWR)

	2006 % of Systems	2007 % of Systems	2008 % of Systems	2009 % of Systems	2010 % of Systems	2011 % of Systems	2012 % of Systems	2013 % of Systems
Illinois	3.3%	4.1%	1.0%	2.0%	3.1%	2.0%	0.5%	0.5%
Indiana	12.2%	12.5%	<del>15.9</del> 17.7%	12.1%	11.1%	12.0%	6.4%	5.3%
Michigan	8.0%	7.1%	<del>6.3</del> 6.8%	5.7%	4.5%	4.2%	5.2%	5.8%
Minnesota	0.7%	0.9%	0%	0.2%	0.4%	0.0%	1.6%	0.8%
Ohio	15.1%	11.4%	<del>7.4</del> 9.4%	7.0%	7.2%	6.5%	7.8%	4.2%
Wisconsin	9.1%	9.5%	<del>6.0</del> 6.5%	7.9%	4.6%	6.6%	6.7%	6.2%
Region 5 - DI	3.8%	3.8%	0%	9.1%	11.5%	8.3%	17.4%	33.3%
<b>TOTAL</b>	<b>8.9%</b>	<b>8.1%</b>	<b><del>7.4</del> 8.3%</b>	<b>6.2%</b>	<b>5.3%</b>	<b>5.4%</b>	<b>5.3%</b>	<b>4.6%</b>

**Percent of Non-Transient Non-Community Water Systems With Significant/Major  
Monitoring Violations for chronic health risks  
CY 2006 - 2013**

***Milestone 6:*** By 2016, improve drinking water system compliance so that less than 10% of non-transient non-community water systems have significant monitoring violations for chronic health risks for all applicable rules.

	2006 % of Systems	2007 % of Systems	2008 % of Systems	2009 % of Systems	2010 % of Systems	2011** % of Systems	2012 ** % of Systems	2013 ** % of Systems
Illinois	21.5%	40.7%	29.1%	24.3%	37.1%	25.7%	24.4%	31.1%
Indiana	8.5%	12.7%	<del>12.7</del> 16.6%	11.3%	10.6%	5.2%	7.1%	4.3%
Michigan	12.3%	17.5%	<del>9.2</del> 10.4%	7.9%	12.1%	5.4%	4.5%	8.3%
Minnesota	4.2%	5.5%	8.3%	7.3%	2.7%	5.9%	5.8%	4.8%
Ohio	18.1%	22.0%	<del>18.5</del> 20.0%	11.8%	12.5% 29.5%^	6.7%	6.7%	8.6%
Wisconsin	4.3%	4.4%	<del>2.5</del> 2.7%	2.5%	4.1%	1.6%	2.1%	4.3%
Region 5 - DI	23.1%	11.5%	8.0%	13.6%	23.1%	0.0%	26.1%	4.2%
<b>TOTAL</b>	<b>11.3%</b>	<b>15.9%</b>	<b><del>11.6</del> 12.8%</b>	<b>9.4%</b>	<b>11.7% 14.5%^</b>	<b>6.8%</b>	<b>6.9%</b>	<b>8.8%</b>

2010

^ After discussion at the State Director's Meeting, it was agreed that the Type 66 LCR violation for consumer notification should not count as a chronic health M&R violation. The new statistics show the measure with those violations excluded.

2011, 2012, and 2013

\*\* Type 66 LCR violation for consumer notification is not counted as a chronic health M&R violation in this table.

**Percent of Transient Non-Community Water Systems With Significant/Major Monitoring Violations  
CY 2006 - 2013**

**Milestone 7:** By 2016, improve drinking water system compliance so less than 10% of transient non-community water systems have significant monitoring violations for all applicable rules.

	2006 % of Systems	2007 % of Systems	2008 % of Systems	2009 % of Systems	2010 % of Systems	2011 % of Systems	2012 % of Systems	2013 % of Systems
Illinois	1.8%	2.0%	1.2%	1.9%	3.6%	1.1%	0.1%	0.3%
Indiana	32.2%	39.1%	42.1%	37.2%	10.7%	29.0%	23.6%	23.2%
Michigan	9.7%	10.0%	10.5%	8.5%	12.4%	7.6%	7.5%	8.8%
Minnesota	0.6%	0.6%	0.5%	0.8%	1.3%	0.5%	0.7%	0.8%
Ohio	34.4%	27.1%	23.1%	18.3%	6.0%	18.1%	19.6%	13.6%
Wisconsin	7.3%	4.6%	4.5%	5.0%	1.2%	2.5%	2.5%	2.6%
Region 5 - DI	0%	11.1%	14.3%	0%	0.1%	25.0%	50.0%	40.0%
<b>TOTAL</b>	<b>10.8%</b>	<b>10.0%</b>	<b>9.9%</b>	<b>8.8%</b>	<b>8.3%</b>	<b>7.0%</b>	<b>6.6%</b>	<b>6.4%</b>

WI DNR DRINKING WATER AND GROUNDWATER PROGRAM  
EnPPA WORKPLAN SUMMARY  
October 1, 2014, through September 30, 2016

**Contacts:**

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- U.S. EPA Region 5 (R5) WI State Program Manager – Joe Janczy, [ [HYPERLINK "mailto:Janczy.Joseph@epa.gov"](mailto:Janczy.Joseph@epa.gov) ], (608) 267-2763

**Federal funding used:** PWSS grant; Drinking Water State Revolving Fund (DWSRF) State program management, local assistance (for capacity development and wellhead protection), and small system technical assistance set-asides; and Clean Water Act Section 106 funds (ground water)

NOTE: Click on the links below to connect to a password protected website for summaries and more detailed information about WI implementation of the national primary drinking water regulations (NPDWRs) or any of the activities below.

For access, contact Joe Janczy.

1. [ [HYPERLINK](https://epa.qpx.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015BBF6.nsf/h_Toc/a4c0568ac09b2fc5852579c700161d51/?OpenDocument)

"[https://epa.qpx.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015BBF6.nsf/h\\_Toc/a4c0568ac09b2fc5852579c700161d51/?OpenDocument](https://epa.qpx.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015BBF6.nsf/h_Toc/a4c0568ac09b2fc5852579c700161d51/?OpenDocument)"] — WI DNR implements NPDWRs as required and prepares for implementation of the Revised Total Coliform Rule (RTCR). WI DNR will submit a final RTCR primacy revision package to R5 or an approvable extension request by February 13, 2015.

WI DNR applied for primacy for the Filter Backwash Recycling Rule (FBRR), Long-Term 2 Surface Water Treatment Rule, Ground Water Rule, Lead and Copper Rule Short-Term Revisions, Stage 2 Disinfectants/Disinfection By-Products Rule, Variances & Exemptions, and a number of minor NPDWR revisions.

Issues to resolve – Complete specific revisions to Wisconsin Administrative Code NR 809 that are identified during primacy application review and resubmit corrections to R5. R5 expects to complete its review of the entire application except for minor NPDWR revisions by February, 2015.

Performance measures – SDW-2.1.1, SDW-SP1.N11, SDW-SP2, and the status of primacy application corrections provided to R5.

2. [HYPERLINK

"https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C700157D04.nsf/h\_Toc/9ba56cee8247ce01852579c700167798/?OpenDocument"] – WI DNR maintains staff with the technical expertise needed to perform sanitary surveys. WI DNR ensures that sanitary surveys are conducted periodically that meet frequency requirements specified by rule. For TNs in contracted counties, WI DNR must manage and continue to evaluate the performance of sanitary surveys conducted by county health departments by reviewing the extent to which significant deficiencies are being identified, and whether frequency requirements are being met. R5 tracks state commitments to conduct sanitary surveys within the federally required intervals.

Performance measure – SDW-01a.

3. [HYPERLINK

"https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70016055A.nsf/h\_Toc/50a7a2f7c68b0990852579c7001671af/?OpenDocument"] — WI will:

- Maintain certification for the WI State Lab of Hygiene.
- Provide an adequate lab certification program for all regulated contaminants. This does not mean that WI must expand its laboratories to perform all the analyses. At a minimum, WI should have an adequate certification program to certify commercial labs within WI.
- Maintain a process for ensuring lab capacity to analyze all NPDWR parameters that are required to be sampled in WI.

4. [HYPERLINK

"https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015D26C.nsf/h\_Toc/d247c4442932350b852579c700165c4b/?OpenDocument"]—WI DNR will evaluate compliance with all NPDWRs, and respond to violations by providing compliance assistance or enforcement as appropriate. Keep adequate records of pertinent state decisions. R5 continues to look to WI DNR to refer noncompliant PWSs and provide quarterly updates on priority systems identified through EPA's Enforcement Targeting Tool.

Performance measure – SDW-02.

5. [HYPERLINK

"https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C700159C89.nsf/h\_Toc/f773ba3fde21dac7852579c7001641c9/?OpenDocument"]— WI DNR will maintain a database which tracks public water systems inventory, actions and violations for all federal rules. Wisconsin will update to the most recent version of FedRep as new releases are made, conduct timely reporting on a quarterly basis to Region 5, and correct any reporting errors as soon as possible.

Performance measures – status of upgrade to FedRep 3.4, status of EMOR violation alert capability, status of reporting violations for newer NPDWRs, and % TCR and nitrate violations reported on-time.

6. Security – WI DNR is expected to adopt and implement an adequate plan for the provision of safe drinking water under emergency circumstances including, but not limited to, earthquakes, floods, hurricanes, and other natural disasters. R5 will review state emergency plans and consult with the state on implementation capabilities.

7. [ HYPERLINK

"[https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C700158EB5.nsf/h\\_Toc/919b620e10f28d06852579c7001669e9/?OpenDocument](https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C700158EB5.nsf/h_Toc/919b620e10f28d06852579c7001669e9/?OpenDocument)" ] — WI will establish and implement minimum professional standards for the operation and maintenance of public water systems to ensure that properly trained and certified professionals are overseeing the treatment and distribution of safe drinking water and to promote compliance. WI DNR will provide documentation to USEPA showing the ongoing implementation of the program to avoid 20% withholding of the DWSRF grant, due on September 30<sup>th</sup> annually. Annual reports must include operator certification reporting measures.

For operators of CWS and NTNCWS: WI will provide training and certification opportunities for new operators and for operators upgrading and renewing certification, including training to ensure sustainable water utilities and supplies.

Performance measure - % of required PWSs that have at least one certified operator.

8. [ HYPERLINK

"[https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C700158751.nsf/h\\_Toc/b64a188dd87b1337852579c70016637d/?OpenDocument](https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C700158751.nsf/h_Toc/b64a188dd87b1337852579c70016637d/?OpenDocument)" ] — WI DNR ensures that new and existing CWSs/NTNCWSs can demonstrate technical, managerial, and financial capacity to operate in compliance with federal and state regulations. By December 31<sup>st</sup>, WI DNR provides documentation annually to R5 showing ongoing implementation. WI DNR submits a report to the governor and provides a copy to EPA on the efficacy of the strategy and the progress made toward improving the capacity of water systems in the state by October 1, 2014.

Performance measure - # and % of CWS and NTNCWS that began operation in the least three years that incurred monitoring, operator certification, lead consumer notification, and/or public notification violations in the same three year period.

9. [HYPERLINK

"[https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015F083.nsf/h\\_Toc/383d4a88413b802e852579c700167d85/?OpenDocument](https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015F083.nsf/h_Toc/383d4a88413b802e852579c700167d85/?OpenDocument)" ] — WI DNR will support public water systems who initiate source water protection (SWP) activities. They will ensure new wells/intakes have SWP plans submitted during plan review. WI DNR will target specific PWSs for more intensive SWP activity, especially to keep nitrate and VOCs below MCLs. They will educate the public and coordinate with local, state and federal agencies about groundwater concerns and studies. WDNR will annually report the number of CWSs with SWP plans and the number of CWSs implementing SWP measures (electronically via SDWIS, if possible) as of June 30 by August 15.

Performance measures – SDW-SP4a and b

10. [HYPERLINK

"[https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015F8CA.nsf/h\\_Toc/dd322cac7ab97ca852579c7001687eb/?OpenDocument](https://epaqp.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015F8CA.nsf/h_Toc/dd322cac7ab97ca852579c7001687eb/?OpenDocument)" ] — There are multiple

national measures in the national program manager guidance that support the “water safe to drink” subobjective 2.1.1 in EPA’s strategic plan. Besides the performance measures listed in this document, R5 also tracks several other measures, including those in the logic model reporting tool, regional shared goals, and regional high priority queries. The most recent data for Wisconsin for each of these measures are available via the “measures and indicators” link to the password protected website.

11. Resources and expertise —WI DNR maintains a baseline core of individuals with the technical expertise to carry out all mandatory components of the PWSS Program (including engineering plan and specification review and emergency response) . Contracts with third parties conducting mandatory components of the PWSS Program will make performance expectations clear, and will be measured and evaluated by the Department. WI DNR uses the *State Drinking Water Program Resource Needs Report & Recommendations* to develop and implement a plan to provide adequate funding to carry out all functions of the PWSS program. R5 to track progress related to state and EPA efforts to obtain additional resources necessary to enable WI DNR to resolve temporary program disinvestments expeditiously.



***WDNR acknowledges the following disinvestments from its primary responsibility to implement and enforce National Primary Drinking Water Regulations (NPDWR) during the October 2014 to September 2016 timeframe.***

***1. Reporting Treatment Technique (TT) Violations for the Ground Water Rule (GWR) and Disinfectants/Disinfection By-Products (D/DBPR) Rules***

40 CFR Part 142.15 requires the WDNR to report PWS violations to EPA every quarter. To report GWR and D/DBPR TT violations, WDNR must upgrade to the latest version of FedRep, version 3.4. As of July 2014, WDNR is in the process of upgrading its reporting capability to include FedRep 3.4. This disinvestment will likely be resolved before the start date for the WI EnPPA workplan. If so, it will be struck from this document.

***2. Correcting Errors in State Code Analogs to the GWR, Stage 2 D/DBPR and the Lead and Copper Rule Short-Term Revisions (LCRSTR)***

In 2011, WDNR submitted to EPA for review primacy applications for the GWR, Stage 2 D/DBPR, LCRSTR, Filter Backwash Recycling Rule, Long-Term 2 Enhanced Surface Water Treatment Rule, the Variances and Exemptions Rule and other minor rule revisions. EPA completed the review of the GWR, Stage 2 D/DBPR and LCRSTR and provided correspondence to WDNR identifying a number of areas where corrections and clarifications needed to be made.

WDNR reviewed the EPA comments for the WI GWR primacy application and agreed to make the changes at the next available opportunity for revising the rule. They also reviewed EPA comments for the WI LCRSTR primacy application and anticipated making the requested changes by April 2016. WDNR agrees to refer cases to EPA when their current lack of regulatory authority precludes them from enforcing specific provisions.

If other rule packages submitted to EPA for review also need correcting, they will be added here for tracking purposes.

***3. Sanitary Surveys and Monitoring Schedules for Non-Community Water Systems (NCWS)***

Under 40 CFR Part 141.21(a)(3)(i), a NCWS serving 1,000 persons or fewer must monitor each calendar quarter that the system provides water to the public, except that the WDNR may reduce this monitoring frequency, in writing, if a sanitary survey shows that the system is free of sanitary defects. The WDNR cannot reduce the monitoring frequency for these systems to less than once/year. 40 CFR Part 142.16(o)(2)(i) requires the State to conduct sanitary surveys at NCWSs every five years.

Approximately 80% of the 10,000-plus Wisconsin NCWSs are allowed by the WDNR to monitor once/year. NCWSs assigned annual monitoring schedules by WDNR should be given quarterly schedules when sanitary surveys are not conducted at proper intervals to show that the system is free of sanitary defects.